HEALTH SCIENCES LIBRARY
OF THE
UNIVERSITY OF NORTH CAROLINA

History Room

Withdrawn

DUKE HOSPITAL LIBRARY
DURHAM, N. C.

Rec'd Dr. J. H. Way
Donor

Digitized by the Internet Archive
in 2009 with funding from
North Carolina History of Health Digital Collection, an LSTA-funded NC ECHO digitization grant project

http://www.archive.org/details/transactionsofan37medi

MINUTES

—OF THE—

THIRTY-SEVENTH ANNUAL SESSION

——OF THE——

Medical Society of North Carolina.

Oxford, N. C., May 27, 1890.

First Day—Morning Session.

The meeting was called to order by the Chairman of the Committee of Arrangements, Dr. J. M. Hays, of Oxford.

Prayer was offered by Rev. W. L. Cunninggim, of the Methodist Church.

The Address of Welcome was made by Hon. A. H. A. Williams, of Oxford, as follows:

Mr. President and Gentlemen of the Medical Society of North Carolina:

On behalf of the citizens of Oxford I welcome you as guests whose presence we greet as fraught with much of joy, instruction and edification. The welcome which we deem it a peculiar and signal honor to tender you, is sincere, hearty and unaffected. It is deep enough and comprehensive enough to include all the members of your Association, whether contemplated in their corporate

capacity or individually, as representative men of a time-honored profession. Oxford realizes that none other than the heartiest welcome would be worthy of the State Medical Society or adequate to the demands of this occasion. I am therefore empowered by her citizens to say that she stands ready and willing, with open doors, with open hands and with open hearts to discharge every requisition made on her courtesy and hospitality.

From the remotest period of antiquity your profession has been one of usefulness and honor. Its mission has been of a worthy and exalted character, and its membership at all times composed of men of skill, intelligence and ability. The interchange of opinions between intelligent physicians of varied experiences, of varied fields of observation, is of untold and incalculable value. Those inclined to self-conceit and arrogance find that they do not know everything. Those of too much modesty and diffidence are encouraged and timulated by seeing and learning that they possess at least as much ability as many of those who have achieved success. The spirit of honorable rivalry and friendly emulation incites a zeal for victory, and a diligence to secure it, that increases the extent and accuracy of your knowledge. The preparation of papers to be read, of speeches to be delivered, of facts to be presented, of data to be preserved, tends to improve all engaged in such labors as well as those who enjoy the fruits thereof. In short, your sessions are short scholastic terms in which all of you, as so many pupils, however old or young you may be, can drink draughts from tha fountains of medical knowledge.

The advantages of your Society cannot at the first blush be fully comprehended. They are too vast and far-reaching to be taken in at the first glance or by a single mind.

In glancing over this assemblage of physicians I observe several gentlemen known to me personally of distinguished ability, of whom our whole State has abundant reason to be proud, and for whom you gentlemen cherish the profoundest respect and consideration. They are men of mark. They would be men of mark in any country, in any age, in any deliberative association or any department of life. In speaking of them as bright stars in the intellectual firmament of their profession, the tribute to them is not fulsome or over-wrought. It falls short rather than exceeds the limit of compliment to which they are justly entitled. Hence arises

the natural enquiry, Why is it that in a profession thus amply supplied as is the Medical Faculty of North Carolina with men of acknowledged genius, learning, practical wisdom, men eminently versed in the science, both of surgery and medicine, that there are so often various types of patients who must of necessity seek medical treatment beyond the limits of the State.

Thus hundreds of invalids go abroad to seek medical attention, each recurring year, not from choice, or whim, or conceit of fancy, but in obedience to advice from their regular home physicians and from the impracticability of otherwise obtaining proper medical service. Is it not feasible, by deliberation, by wisdom, by concert of action on your part, in great measure to correct this state of affairs?

The trouble is, "a condition, and not a theory, confronts us," the necessity of which, I am sure you deplore, and trust you will be able to lessen, if you cannot wholly extirpate. The objection that much money is taken from the State never to return, is secondary in comparison with the inconvenience, annoyance and other disadvantages that are transparent on a moment's reflection. Among these disadvantages the sparseness of population, the lack of large cities and the dearth of money are hindrances not readily surmounted, still I opine that much at no distant day will be accomplished through your honorable organization to overcome these difficulties.

It is to be hoped that an advanced step will be taken in the formation of suitable homes or hospitals where our sick people can be treated by our own doctors and in our own State. Accomplish this, gentlemen, and you will have added another link in the chain of gratitude that endears you to the people.

We read that "when Captain Murrel, of the steamship Missouri, beheld the Danish steamer Denmark, with her seven hundred passengers lying helpless in mid-ocean, he was compelled to decide between landing his valuable cargo or saving the lives of these human beings. Right quickly did he decide. Overboard went the cargo, and he had his reward in the love of the rescued, the approval of his employers, the praise of millions in all lands, testimonials from the known and unknown, and finally crowned with the honor of knighthood by the King of Denmark." I would not disparage one word of praise thus bestowed on Capt. Murrell. I would

prefer to add another leaflet of honor to his brow. But were the noble deeds of the men of your fraternity, which are often no sooner rendered than they perish in oblivion, were the noble deeds of sacrifice, of comfort, of fortune, of time, yea, of life itself, fully known and duly recognized by Government in the bestowal of its dignities and its honors, neither the sailors, who brave the dangers of the ocean and fight in defence of their flags the naval battle of the country, nor the soldiers who "dare or die" in defence of freedom's battles, are more entitled to knighthood than the grand, benevolent, big-hearted physician, who, by night or by day, in storm or fair weather, in sickness or in health, in adversity or prosperity, go forth, "like angel's visits on embassies of love," to alleviate suffering humanity.

Of course, then, I do not undervalue the distinction of being the medium of conveying to you a welcome, "the warmest of warm welcomes," to our homes and firesides. As your Society is a growing, enterprising, progressive organization, it is with peculiar fitness that you are holding a session of your Convention in the growing, enterprising, progressive town of Oxford, an embryo city, with the best social, intellectual, educational, moral and religious advantages. Possessing such a town as this, in the enjoyment of superior railroad facilities, with a salubrious climate, flanked on all sides with the best soil in the world for the growth of the bright leaf tobacco of golden hue, silken texture, exquisite aroma and international fame, what prevents Oxford from being one of the most populous cities of North Carolina, as she is to-day one of the most pleasant places of abode on the American continent. I am sure you have heard of the fame of Oxford, and I am gratified that you are here in person to see her nestling in beauty on the healthy hills of Granville. I am particularly gratified that you have come at this season of the year when Oxford is clad in natural robes of verdure and loveliness which seemingly, in unison with the spirit of the hour, are waving you a gladsome, spontaneous welcome.

Dr. J. A. Hodges, of Fayetteville, made the response on behalf of the Society in the following words :

It is a high privilege, Mr. President, to respond to so generous a greeting; and for the kind words of welcome, sir, which you have been pleased to extend in the name of your citizens, I would, on

behalf of my colleagues, return our most cordial and grateful thanks.

Pleasure hath her votaries no less renowned than science, and I am not slow to admit that such reunions as we have witnessed here to-day, such commingling of brother with brother and friend with friend, are not the least charming incidents of our annual convocations. Wearied and worn by the labors and fatigues of a life that seemingly has no ending, this respite from duty, this surcease from care, this meeting new friends, this renewing old acquaintances, is, indeed, to us a pleasure, sweet as it is refreshing, and exhilirating as it will be enduring.

From year to year we have been accustomed to meet in every section of our State, even from where the grand old Alleghanies look down into the chambers of the setting sun all along to the ocean-washed shores of Eastern Carolina, and on every occasion we have been proffered the distinguished courtesies of an honored reception; but from what I have already experienced and witnessed here, I am assured that no more generous-hearted nor open-handed welcome has ever been tendered the Medical Society than in this, the town of Oxford, amid the hills of old Granville.

As students of North Carolina history, we are not unacquainted with, nor unmindful, nor unappreciative of the conspicuous part played by the sons of Granville in the historic past. The historian Wheeler, in writing of the past history of your county, devotes but one single line to it: "Her citizens early took a decided stand for liberty;" but how full of meaning these words! How pregnant with the data of unwritten history, the pride and glory of many a vanished time! Even now, would we have the sparks of a living patriotism kindled afresh in our loyal hearts, we have but to remember for the inspiration a Person or a Penn, a Benton or a Hunt, names inscribed "High on the dusty roll which ages keep." And in later years the same chivalric and dauntless spirit has animated your sons and characterized their actions, as attested in our State's annals by their deathless valor and quenchless bravery along the fiery crests of an hundred battle-fields.

Or if, as North Carolinians, we prize intellectual worth and true nobility of soul, we should not forget your bright galaxy of distinguished talent: Among others, your Hendersons and Williams';

your Venables and Gilliams; your Kyles and Kingsburys'—illustrious sires of as illustrious sons.

But from these glories of the past, grand and inspiring as they are, we must turn to the present, with its potent promises. You have not asked us to follow you forth into the mystical realms of the witchland and list for many a dreamy hour, perhaps, to some fabled myth of the falries concerning the mouldering landmarks of the past hereabouts, nor study with you the fast crumbling monuments of a now decaying civilization; but rather you have invited us out into the broad and open sunlight of to-day into the stirring scenes of the acting present, into the busy hives of your many industries, as you have with commendable pride so eloquently depicted them, and bade us learn well for ourselves the lessons of your thrift and prosperity as writ in living letters of golden promise above the shining portals of your coming city.

For seventy years Oxford has been distinguished as the centre of culture and refinement and renowned as such the State over. It is said when it voted but sixty-five whites that twenty-five of them could have written a respectable essay for publication. Those of her sons who have remained within her gates and those who have gone forth to win distinction and proud honors abroad, have alike influenced the destinies of the State and of the Nation.

The social and civil, as well as the religious and educational, institutions of Oxford have long been her pride and boast, but chiefest among them all is yonder noble edifice, in which every true North Carolinian feels a peculiar pride and pleasure. It is the offspring of a noble charity dedicated to helpless humanity. It is a true and fitting monument of that spirit of charity which prevails throughout our land, which is neither the fruit of study nor the privilege of refinement, which in its ministrations knows no sect, no creed, no class, but over all alike spreads its white wings of protecting love. Be there known in our fair State either grief or penury; be there heard either sighing or sorrow; be there, indeed, sickness and suffering, no matter how humble; be there sin and misery, no matter how degraded, the gentle hand of humanity, if need be, stays the fiat of wayward fate, and in faith and hope and love points earth's sick and suffering ones to yonder temple of North Carolina's noblest charity. Forever honored be this sacred work of humanity, this grand and glorious Institution to charity! The recording

angel of abiding justice will preserve its annals of generous deeds, and the soul from whence it sprang shall be immortal.

In short, I would congratulate you, men of Oxford, upon this beautiful specimen of your handicraft, this lovely town of yours—the Queen City of the Golden Belt.

The home of a brave and hospitable people, she stands to-day but upon the threshold of her greatness, and through the half opened door of the future streams the glad light of a grander day; her soul is fired with the breath of a new-born life, her energies are quickened with the impulse of a new blood, and she is thrilling to-day with the consciousness of a growing power and prosperity, Her country-sides are her storehouses of inexhaustible mineral wealth, and her fertile fields are yellow with the golden splendor of "Granville brights," that in the gladsome harvest time shall reflect not only the sunlight of this happy land, but as well the happiness and wealth of her favored people. I salute you and bid you god-speed in this great work of industrial redemption and prosperity.

In closing, sir, I would tell you that we shall not soon forget your eloquent words in regard to our honorable profession. In contributing to our advancing civilization no profession has been more active or useful than ours, for in erudition and scientific investigation, as well as in devotion to suffering humanity, the medical profession is excelled by no other, and the promises of the past have been more than fulfilled by the successes of the present. And now, standing between the past and present and amid the conflicts of truth with error, we are rejoiced to tell you that we see already in the scientific developments of future medicine the dawn of a new and brighter era.

Once again, ladies and gentlemen of Oxford, I would return thanks for this welcome to the civic freedom of your lovely town, where your fair daughters are always fairest in their lovely beauty, and your gallant sons always warmest in their generous hospitality, and I would wish for you that, as in the past, so now, and ever in the future, peace and prosperity may dwell within your borders, plenty and her handmaiden prudence preside at your board, and health and happiness strew along your pathway the flowers of perpetual youth—in short, that your homes may ever be your castles, wherein each coming guest, as we to-day, shall be made happy by the benedictions of your welcome.

Dr. Geo. Gillett Thomas, President, then took the Chair, saying:

Gentlemen, a very cordial welcome has been extended you, and fittingly accepted on behalf of the Society. Let us go to work and show that we are worthy of this generous hospitality.

The Secretary then called the roll, the following members being present:*

Dr. S. Westray Battle, U. S. N. Asheville, N. C.
" J. W. McNeill, Fayetteville, "
" R. A. Patterson, Aurelian Springs, "
" J. E. Brothers, Wilson, "
" C. M. Poole, Salisbury, "
" B. McBryde, Maxton, "
" Thomas Hill, Goldsboro, "
" Allmand Holmes, Clinton, "
" J. S. Royster, Townesville, "
" C. T. Wyche, Dabney, "
" H. P. Murray, Plymouth, "
" W. E. Turlington, Benson, "
" B. S. Utley, Holly Springs, "
" W. W. Griggs, Elizabeth City, "
" O. McMullan, " "
" G. W. Purefoy, Asheville, "
" Geo. Gillett Thomas, Wilmington, "
" R. J. Noble, Smithfield, "
" Thomas F. Wood, Wilmington, "
" P. L. Murphy, Morganton, "
" Francis Duffy, Newbern, "
" W. Best, Johnson's Mill, "
" H. T. Chapin, Pittsboro, "
" Wm. Hicks, Fish Dam, "
" James A. Hodges, Fayetteville, "
" Julian M. Baker, Tarboro, "
" N. B. Herring, Wilson, "
" W. H. Whitehead, Attleborough, "
" A. Anderson, Wilson, "
" W. G. Freeman, Murfreesboro, "
" H. O. Hyatt, Kinston, "
" Thos. M. Jordan, Hookerton, "

*Taken from book of registration.

Dr. J. D. Roberts, Durham, N. C.
" J. Howell Way, Waynesville, "
" J. W. Faison, Mt. Olive, "
" R. H. Speight, Tarboro, "
" F. C. James, Bethel, "
" Will B. Crawford, Lexington, "
" C. H. Lewis, Farmers, "
" W. J. Jones, Goldsboro, "
" Geo. W. Long, Graham, "
" John McDonald, Washington, "
" L. A. Hanks, Pittsboro, "
" T. L. Booth, Stem, "
" John Sweaney, Berea, "
" L. F. High, Garysburg, "
" J. T. Strickland, Thomasville, "
" Thomas E. Hilliard, Asheville, "
" W. H. Harrell, Williamston, "
" C. J. O'Hagan, Greenville, "
" W. C. McDuffie, Fayetteville, "
" A. B. Pierce, Weldon, "
" O. Gregory, Oxford, "
" H. B. Weaver, Asheville, "
" M. P. Perry, Macon, "
" J. L. Edgerton, Hendersonville, "
" John H. Williams, Asheville, "
" L. G. Broughton, Reidsville, "
" A. W. Knox, Raleigh, "
" W. P. Whittington, Asheville, "
" J. A. Reagan, Weaverville, "
" W. J. H. Bellamy, Wilmington, "
" W. R. Wood. Raleigh, "
" J. B. Dun, " "
" E. H. McCullers, Clayton, "
" J. M. O'Kelly, Williams' Mills, "
" S. D. Booth, Oxford, "
" D. C. Parris, Hillsboro, "
" J. P. Munroe. Davidson College, "
" J. A. Faison, Mt. Olive, "
" J. C. Grady, Lenoir Springs, "

Dr. G. H. Dodd, Clayton, N. C.
" W. H. Lilly, Concord, "
" M. E. Robinson, Goldsboro, "
" R. S. Young, Concord, "
" W. C. Galloway, Snow Hill, "
" A. R. Zollicoffer, Weldon, "
" A. B. Lyman, Baltimore, Md.
" D. B. Zollicoffer, Garysburg, "
" Theo. F. Meisenheimer, Marven, "
" F. R. Harris, Henderson, "
" L. E. Norfleet, Tarboro, "
" K. M. Ferguson, Cameron, "
" J. E. Ashecraft, Monroe, "
" E. T. Speed, Coakley, "
" W. A. Monroe, Waxhaw, "
" M. C. Hunter, Huntersville. "
" George A. Foote, Warrenton, "
" J. P. Smallwood, Lewiston, "
" R. E. Hinman, Charlotte, "
" H. H. Harris, Wake Forest, "
" M. Bolton, Rich Square, "
" Wm. A. Graham, Charlotte, "
" Robert L. Gibbon, " "
" J. S. Lafferty, Concord, "
" W. T. Cheatham, Henderson, "
" B. W. Hathaway, Avoca, "
" O. H. Boynton, Lisbon, N. H.
" D. N. Sills, Castalia, "
" G. M. Hackler, Mars Hill, "
" L. A. Ceever, Milton, "
" J. H. Marsh, Fayetteville, "
" Wm. Hill Wilson, Gastonia, "
" Wm. H. H. Cobb, Goldsboro, "
" Samuel A. Henley, Asheboro, "
" L. L. Sasser, Smithfield, "
" Eugene Grissom, Raleigh, "
" J. C. Walton, Milton, "
" Wm. H. Cobb, Jr., Goldsboro, "
" Thomas E. Anderson, Statesville, "

Dr. Jas. L. Nicholson, Richlands, N. C.
" R. L. Payne, Jr., Lexington, "
" J. P. Fearington, Faison, "
" Geo. S. Lloyd, Tarboro, "
" W. S. Anderson, Wilson, "
" W. D. Pemberton, Big Lick, "
" S. S. Satchwell, Burgaw, "
" J. J. Summerell, Salisbury, "
" J. A. Wise, Roxboro, "
" P. B. Loftin, Grifton, "
" John H. Tucker, Henderson, "
" J. T. Nicholson, Bath, "
" G. L. Wimberley, Rocky Mount, "
" J. C. Braswell, Whitaker, "
" E. G. Moore, Toisnot, "
" Henry T. Bahnson, Salem, "
" John W. White, Wilkesboro, "
" Archibald Cheatham, Henderson, "
" John W. Taylor, Union, "
" John M. Manning, Durham, "
" J. M. Hodges, La Grange, "
" J. M. Kirkpatrick, La Grange, "
" H. H. Whitaker, Old Sparta, "
" E. A. Spica, Mt. Pisgah, "
" J. L. McMillan, Red Springs, "
" A. T. Cotten, Morrisville, "
" James R. Rogers, Apex, "
" H. B. Marriott, Battleboro, "
" J. A. McLelland, Mooresville, "
" M. R. Adams, Statesville, "
" Thoms P. Wynn, Tarboro, "
" J. M. Emmett, Oxford, "
" J. M. Hadley, La Grange, "
" Richard H. Lewis, Raleigh, "
" John C. Kirkman, Mt. Vernon Springs, "
" S. T. Nicholson, Washington, "
" I. G. Riddick, Youngville, "
" S. L. Montgomery, Monroe, "
" M. R. Braswell, Rocky Mount, "

Dr. G. W. Kernodle, Altamahaw, "
" W. B. Crisp, Roxboro, "
" Jeff. D. Jenkins, Tarboro, "
" J. P. Battle, Toisnot, "
" L. J. Picöt, Littleton, "
" John L. Ray, Burnsville, "
" J. J. Mann, Nashville, "
" B. Chears, Thomasville, "
" K. P. Battle, Raleigh, "
" James W. McGee, Jr., Raleigh, "
" Willis Alston, Littleton, "

The President asked for report of Board of Censors holding over from last year. No report.

The following committees were announced :

Committee on Credentials.—Drs. S. D. Borth, J. H. Way and L. J. Picöt.

Committee on Finance.—Drs. W. H. Whitehead, W. H. Lilly and G. W. Purefoy.

The President then read his address, of which the following is an abstract :

Abstract of the President's Address.

The President in his address called the attention of the Society to their position with regard to the medical laws of the State; that, being the originators of the laws and the medium through which they were presented to the Legislature, it behooved them to provide for such supervision as was within their power for furthering the enforcement of the statutes. After a careful review of the new regulation and a comparatively safe estimate of the number of physicians registered and unregistered in the State, he explained that the registration was adopted as the only means by which all persons styling themselves physicians in this State could be made known. He suggested that the Board of Medical Examiners be asked to assume a supervision of the laws, and to this end he suggested that a member of that Board be designated to keep up with the annual registrations, through the reports of clerks of the counties and by means of correspondence to be established with physicians of recognized character all over the State.

To keep an unbroken line of work in the Board of Examiners, he

suggested that a biennial election be held to elect two new members of their Board, these to succeed two whose terms should expire by law, according to a schedule which he offered to the Society.

After a member had served the Society for twenty years, it was thought by the President becoming this Society to release him from payment of all dues and fines, but to continue him all the privileges and benefits of the organization, placing him upon a separate list, to be styled "The Honorary Fellows of the Medical Society of the State of North Carolina." He asked that suitable provision should be made before hand for the proper hotel accommodation of members in towns nominated as places of meeting—in order that the Society might know what rates would be expected of them, and what routes were open to reach the places under discussion.

He called attention to the fact already set forth in the pages of the JOURNAL, that the decision of the Supreme Court of the United States had by their decision in the case of Dent vs. West Virginia forever sets at rest the question of the right of a State to provide protection for its citizens by statute from unqualified practitioners; and it is just as well that this decision of the Justices be held up for the continual inspection of the uncomfortable people who think that the laws now in force are too rigid, or not just.

Dr. R. H. Lewis moved that a committee of three be appointed to consider and report on the suggestions contained in the President's Address. Carried.

The President appointed on said committee Drs. A. W. Knox, L. G. Broughton and R. G. Noble.

Committee on Pittman Prize.—The President appointed on this committee Drs. Thomas F. Wood, H. T. Bahnson and George W. Long.

Dr. Thomas F. Wood introduced the following resolutions:

Resolved, 1st. That the election of a Board of Medical Examiners be made the special order for Wednesday at 10 o'clock, and that the election be proceeded with in continuous session until it is completed.

Resolved, 2d. That a committee of three be appointed to arrange the details of the method of conducting the election, to report at the opening of Wednesday's session.

Dr. O'Hagan asked an explanation of the latter part, and Dr. Wood said that the details in the election of this kind are sometimes very tedious, and that the committee shall arrange a proper

proceeding so as to avoid confusion and delay in the election. He gave a brief outline of suggestions as to the points the committee should consider and decide upon.

The resolution of Dr. Wood was unanimously adopted.

Dr. Thomas F. Wood announced that Dr. J. W. Long, of Randleman. had consented to make some demonstrations in urinary analyses which are free to all who take any interest in the matter. He could say for Dr. Long that he had made abundant preparation and made himself skilful in these manipulations, and it will be a matter of great interest and information.

Dr. Long thanked Dr. Wood for his kind indorsement, but said he had just been called home, and would have to leave this afternoon. He would make a few demonstrations before he left.

[NOTE.—Great interest was shown in Dr. Long's demonstration in urinary chemistry. With good judgment he selected the most practical tests, including Purdy's qualitative and quantitative tests for sugar. This experiment in urinary chemistry ought to encourage the Society to set apart a special hour for demonstrations in open session, as not one-half of those who were anxious to witness the manipulations could crowd into the room assigned to the purpose.]

The Secretary read the following hours for meeting, viz : 9 a. m., 3 p. m., 8 : 30 p. m.

On motion meeting adjourned.

FIRST DAY—AFTERNOON SESSION.

Meeting called to order at 3 o'clock.

Partial report of Committee on Credentials was read and on motion received.

Dr. L. G. Broughton, chairman of Section on Practice, being absent, the President declared the meeting open for voluntary papers.

Dr. J. Hay Williams, of Asheville, read a paper on "The Propriety of Interference in Gun-shot Wounds of the Abdomen."

On motion, Dr. Williams' paper was referred to the Committee on Publication.

The President called for reports of Chairmen of Sections.

The Secretary read a letter of regret from Dr. John M. Faison

for his inability to be present, and stating that he had a paper in preparation, which on motion was referred to the Committee on Publication.

Letters were received from Drs. J. W. Jones, —— Wilson and A. G. Carr, regretting their inability to be present.

The Committee on Credentials reported on the name of Dr. J. H. Marsh, of Fayetteville. Report accepted.

Dr. J. D. Roberts asked to have his name recorded in the negative on the question of referring Dr. Faison's paper to the Committee on Publication, as he did not think it right to refer papers that were not here and not even finished. He did not hear the negative side of the question put to the meeting.

A discussion beginning, the President called the meeting to order, saying it could not be discussed unless reconsidered after motion made and seconded.

A motion to reconsider was made by Dr. S. D. Booth and lost. Dr. Booth explained his motion as only intended to get the discussion.

Dr. J. W. Long read a paper on "The Use of the Curette after Labor and Abortion."

He had to stop before finishing his paper, being called home by telegram, and on motion of Dr. McDuffie it was referred to the Committe on Publication.

Dr. R. H. Lewis, as chairman of the committee to consider the suggestions in the President's address, read the following report:

Your committee, appointed to consider and report upon the recommendations contained in the admirable address of our President, would respectfully advise the passage of the following resolutions.

In regard to the change in the terms of office of the members of the Board of Medical Examiners to be elected at this meeting in order that the Board may hereafter be a continuing body—

Resolved, That the seven members of the Board be divided into three classes, one of three members to be elected for six years; one of two members to be elected for four years, and one of two members to be elected for two years; and that their successors be elected for six years.

In regard to some provision for the practical and effective enforcement of the Law Regulating the Practice of Medicine—

Resolved, That a committee of seven be created by the Society, whose duty it shall be to see to it that the law is enforced throughout the State, and that this committee be composed of those members of the Society who shall be elected members of the Board of Examiners.

Resolved, That any one accepting a position upon the Board of Examiners is understood to accept the duties and responsibilities imposed by the Society in the foregoing resolution.

Resolved, That the committee be authorized through its chairman to draw on the treasurer of the Society for sums of money as they may be needed for the above purposes, aggregating not more than $600, during the coming fiscal year.

In regard to the place of meeting—

Resolved, That a special committee of five be appointed by the President to receive propositions and select the place of meeting for the next ensuing session.

We would recommend that those desiring to have the Society meet in their town appear before the committee prepared to give the hotel accommodations and the rates.

In regard to the creation of Honorary Fellows—

Resolved, That those who have been members of the Society for thirty years, and who have paid their annual dues for the same length of time, be made at the expiration of that period Honorary Fellows, who shall have all the privileges of the Society while exempt from its dues.

RICHARD H. LEWIS,
L. G. BROUGHTON,
R. J. NOBLE.

The sections were then taken up separately.

Section 1, Dr. Lewis said, was to prevent the election of an entirely new Board at any time.

It was adopted unanimously.

Section 2.—Dr. Lewis called attention to the fact, as mentioned by the President, that there were 599 unregistered persons practicing medicine in the State, and therefore violating the law. If an individual were to report these men it would be looked upon as an act of jealousy, and it was important to appoint a committee whose duty it shall be to look after the enforcement of the law. This committee being elected become not only officers of the State as Medical Examiners, but are the servants of the Society, whose duty it shall be to bring complaint against these men. If there be not money enough in the treasury, he was in favor of making the assessment for this year $3.00. Now is the time, this is the year, for us to see that the law is enforced.

Dr. O'Hagan asked for the reading of that clause of the law relating to registration.

It was read by the Secretary.

Dr. Grissom thought there was such a thing as too rapid progress even in reform. There is such a thing as too rapid execution of a law, by which a revulsion of public sentiment is brought about. As had been stated, there were about one-fourth of the practicing physicians of North Carolina who had failed to register. The time given in which to register was very short, and the penalty is a serious one. He spoke of the fact that even deeds for real estate have remained unregistered for fifty years. He undertook to predict, and predict with pain, that with a rigid execution of this law now upon six hundred doctors in the State, will produce such a revulsion of public sentiment that the next Legislature will sweep the entire law from the statute books. No man here will be in favor of it, and no man will use his influence in favor of it. What it is the power of this Convention to do he was not prepared to say. He thought it advisable to prevent a speedy, rapid and severe execution of the law by showing indulgence. He thought such action would be founded in wisdom. He mentioned that one of the most prominent men in the State, sitting in his hearing, had failed to register. Can you undertake to enforce this law with such short notice? Over 25 per cent. of the medical body of the State had failed to register. Enforce this law rigidly on these six hundred men, and the whole law will be repealed. He called to mind a time when the law came within one vote of falling through, the credit for its rescue being due to himself. Put to the test these six hundred men, and he would undertake to say that at the next Legislature a much larger committee would have to be appointed to prevent the whole law being swept from the statute books.

Dr. Foote thought Dr. Lewis had introduced two years ago a resolution appropriating $500 to [illegible] very purpose. He judged other counties by his own, where no physician was allowed to practice who had not complied with the laws. He was opposed to taxing the Society an extra dollar to enforce a law which is already enforced if members of the Society will do their duty. In regard to the bugbear of the law being repealed, this has always been held up before the eyes of the Board of Examiners. He would stand boldly and say enforce the law, and if they want to repeal the law

charges his duty to the satisfaction of his patients. It is impossible for him to be present here. I think, were he present and the conditions connected with his application made more fully known to the Society, he would, after referring his case to the Board of Examiners, be readily admitted. As a gentleman, I can endorse him in a thorough manner; as to his professional attainments, he lives so far away that I cannot speak, but gentlemen who live closer can perhaps give you more information on that point than I can. I admit that the mode of application does not meet with favor from me, and I think the rule which was adopted and which was afterwards repealed, that all applications should be made in person, should be revived. If the honor of belonging to the Medical Society of North Carolina be worth anything, it is ceriainly worth coming in person to ask for. I will now read you the application of Dr. Edward Thorne, of Halifax, and you can take what action you think best.

Dr. O'Hagan then read the letter of Dr. Thorne.

Dr. Thomas F. Wood moved that it be referred to the Committee on Credentials, which was carried.

Report of the Committee on the President's Message.

Dr. George G. Thomas read the report of the Committee appointed to consider the suggestions in the President's Address, as follows :

Mr. President and Gentlemen of the Society:

Your Committee appointed to consider the suggestions made in the message of the President and report on them for your action, deem it not inconsistent with the duty assigned them to express for themselves and again for this Society the regret that is felt at the absence of our honored friend. Assured as he was of the hearty good will of this body, enthused with a desire to make his administration a justified return for the pleasure which his elevation to the place of presiding officer, where our choice last year had placed him, earnest and honest in his purpose to fill his position with credit to himself and for the benefit of this organization, it is with sorrow and sympathy that we know that sickness of such a serions nature should have overtaken him at the very outset of his executive career.

We earnestly commend the suggestion of the President that this

Society shall continue its recorded opposition to the establishment of medical colleges in this State until such time as they can begin this course with a sufficient endowment to set all chance of failure out of the question. The standard of proficiency which has been established and maintained by the Board of Examiners demands that the candidates for their license shall be well educated, and the very spirit of their work demands that all of the medical colleges which our young men may attend shall be equipped with laboratories of the best character, and the studies of the pupils directed by men of learning and charaeter. It is needless to discuss this suggestion at length, for its worth is thoroughly apparent.

The Committee to whom were given the revision and amendment of the medical laws of the State will make a report at the session, and the commendation for their work will prepare the way for their report.

The suggestion that a committee be appointed by this Society to represent it at the meeting to be held in the month of May, 1890, to revise the Pharmacopœia will most assuredly meet your approval. This is one of the most important works that is undertaken by the profession of the country, and it is our duty to be represented in this coming Convention by a delegation of three of our members.

The law that was passed at Charlotte making it possible for a physician to join the Society by a written application, endorsed by two members of the Society in good standing—the applicant himself not being present when the application is submitted, is not in accordance with the spirit of our laws, and has not realized the hopes of the author of the law, and we agree with the message of the President that it should be repealed. There is no good reason why a physician who desires to become a member of the Society and enjoy its privileges should not be willing to come to its meetings and enter its lists in the usual and well-approved method.

The practice of allowing reports from sections to be submitted to this Society by proxy is not a reasonable permission to be granted by this body, as it is supposed to be a part, and no inconsiderable part, of the author's duties that he shall be present when his report is made to defend his report, if assailed, as well as to show by his attendance at the meeting his appreciation of the compliment which he received by the appointment to his important place. Of course

from simple neglect. He himself was among the number. He thought it would be a hardship if the law is enforced vigorously now.

Dr. Whittington said there is a medium that ought to be reached. He was pretty certain that there are not five hundred reputable physicians in North Carolina who have failed to register. At the same time there are some, and he thought they did not understand the purport of the law. He was in the Assembly when the bill was passed, and there was hardly a dissenting voice. He knew one reputable physician who had failed to register, but his name now appears on the clerk's book under date of December 31st, 1889. He suggested that a resolution be adopted saying that those who have failed to register by June 1st, 1890 would not be prosecuted before the 15th of July, but after that time the law would be enforced to its fullest extent.

Dr. W. J. Jones thought the discussion was reaching quite a length and unnecessarily. He thought it is not the Society's business to sit in judgment on the laws of North Carolina. The law is a fixed fact. Leave it to the officers of the courts of North Carolina—to the solicitor sitting there, knowing the law full well. We want no class legislation. We hear our treasurers say the coffers are empty and we are opposed to high taxes in the Society as well as in national affairs. He thought it unnecessary to discuss the matter farther. He hoped it would be voted down.

Dr. Holmes thought the discussion entirely out of place. The Society has asked for a law and the Legislature has passed it. Let it rest now as it is.

Dr. Pierce thought we had gotten into a dilemma. It has debarred from practicing a great many worthy men who through neglect had failed to register. He mentioned two men who had registered, one having attended only one course of lectures, and the other none at all. Another one, an excellent physician, had neglected to do so. He is a licentiate of the Board. He thought the law unconstitutional—*ex post facto*—and would have fought it had he been in the Legislature. After the Board has licensed a man can we come and say he must stop practicing because he failed to register? He had it from the Attorney General that in his opinion the law was only intended for those who were not licentiates of the Board—that

those who had been practising and were licensed by the Board were still entitled to practice.

Dr. Lewis stated that he was called in consultation with the Attorney General before he rendered his decision, and he gave it as his opinion that *no one* could register now without a new license. Those holding a license from the Board would have no trouble in getting a duplicate.

Dr. Pierce thought it hard that those incompetent men who had registered should be privileged beyond those good men who through neglect had failed to do so. He opposed making the Board of Examiners a board of inquisition.

Dr. Grissom offered an amendment to the section that unregistered physicians be allowed until January 1st, 1891, in which to register.

Dr. Holmes moved a second amendment by striking out that part making the seven Examiners the committee.

Dr. Bahnson moved an indefinite postponement of the whole section. Carried.

Section 3 was read. (Referring to time and place of meeting.)

Dr. Faison objected because this was the only business of the Society not done by a committee, and he did not want to lose this little fun.

The question being put to the house, the section was lost—after division was called for.

Section 4 was read. (Referring to Honorary Fellows.)

Dr. Thomas F. Wood explained that some eminent members of the Society going out of practice as they advance in years, fail to send their dues to the treasurer and their names are dropped from the roll. Among those so failing have been some of the founders of the Society.

The motion was adopted unanimously.

The report of the committe as amended was accepted.

The Committee on Credentials reported on the name of Dr. J. G. Riddick, Youngsville.

The President introduced to the Society Dr. Wm. A. Hammond, of Washington, D. C.

Dr. Hammond expressed great pleasure in being asked to be present and addressing a Society in a State he has long honored and respected. He delivered an interesting and instructive lecture on the "Differential Diagnosis of Diseases of the Spinal Column."

Dr. Herring asked remarks from members on Hydro-rachrachis.

Dr. Long asked Prof. Hammond's opinion as to excessive sexual indulgence in the etiology of locomotor ataxia.

Dr. Hammond considered it a very prolific cause of all spinal diseases. He believed that 99 per cent. of spinal diseases was caused by excessive sexual indulgence, excessive alcohol and syphilis. These three, and the greatest of these is sexual indulgence.

Dr. Long moved a vote of thanks to Dr. Hammond, and it was adopted without hearing the negative side.

The President appointed on the committee to formulate rules for the election of Medical Examiners Drs. Thomas F. Wood, S. W. Battle, J. W. McNeal.

On Board of Censors Drs. W. C. McDuffie. R. L. Payne, Jr., T. A. Anderson.

The Committee on Credentials reported the name of Dr. J. H. Marsh, of Fayetteville. Report accepted.

On motion, the meeting adjourned.

First Day—Evening Session.

Meeting called to order at 9 o'clock.

On motion of Dr. Holmes it was decided to request Dr. Hammond to furnish the Society a copy of his interesting lecture of the afternoon to be referred to the Committee on Publication.

The President announced as the order of business the reading of the Annual Essay by Dr. J. W. Faison.

Dr. Payne, Jr., was much interested in Dr. Faison's paper, and moved it be referred to the Committee on Publication. Carried.

The Committee on Credentials reported the names of Drs. John W. Booth, Tally Ho; T. L. Booth, Tally Ho; Wm. G. Stafford, Hendersonville; J. L. Egerton, Hendersonville; John Emmett, Berea; J. S. Lafferty, Concord; W. A. Graham, Charlotte; Robert L. Gibbon, Charlotte; C. E. Hilliard, Asheville; B. W. Hathaway, Avoca; L. A. Hanks, Pittsboro.

Report accepted.

Dr. C. M. Poole read the following in reference to an Inebriate Asylum:

Whereas, It is the sense of this Society that the inordinate use

of alcoholic stimulants is a disease as well as any other departure from the normal, healthy state is a disease; and,

WHEREAS, It is believed that, by proper isolation and treatment, many of these cases could be cured and rendered a blessing instead of a curse to themselves and their families; and,

WHEREAS, The Constitution of the State of North Carolina provides that the State shall care for and educate the inebriates of the State; therefore be it

Resolved, That the President of this Society shall appoint a committee of five whose duty it shall be to memorialize the Legislature of North Carolina and urge upon that body the necessity of caring for the inebriates of the State. Adopted.

Dr. Williams said that Dr. Lyman, of Baltimore, was present with a very valuable invention as a substitute for the Tarnier forceps, and asked that he be requested to read his paper.

Dr. Lyman read his paper, illustrating it by diagrams and exhibiting his instrument.

On motion of Dr. Hays, Dr. J. A. Hodges read a paper on "The Insane in the State."

Dr. Booth moved the reference of Dr. Lyman's paper to the Committee on Publication. Carried.

Dr. McDonald asked to correct Dr. Hodges' paper in regard to the insane in Washington county, there being only two in the Poor House and none in the jail. He moved Dr. Hodges' paper be referred to the Committee on Publication. Carried.

Dr. Roberts indorsed Dr. Hodges' remarks, saying it is not an overdrawn picture, but if he errs at all it is in falling short of the true condition. In trying to gather statistics on this subject six years ago he found there were nearly two thousand insane in the State outside of asylums. He thought it a blot on the fair name of the State the way the insane are treated. Something should be done, but what he did not know. He had thought on it, written on it and spoken on it.

Dr. Foote wished to protect the Superintendent of Health of his county and the Board of Directors of the Raleigh Asylum. He thought the asylums should be used primarily for the acute and curable insane rather than for the chronic and harmless insane. The appropriation for the Raleigh Asylum was only $2,500, and there are about 350 inmates in the Asylum now.

Dr. Miller thought the subject very important and interesting, and concerns the State, and thought the paper should be printed in

the secular papers for the benefit of the people. He thought the suggestion very wise that a conference of committees from the different asylums, with one from the Society, to consult on this important question. He thought each county should care for its incurable but harmless insane. He said the counties wanted to shift a responsibility and expense on the State and the State could not afford it.

Dr. Thomas F. Wood moved that a committee, consisting of Dr. Hodges and two others to be selected by himself, meet committees from the different asylums. He suggested this as the expense would be considerable, and the Board of Health is empowered to incur the expense of such investigations, and Dr. Hodges was a member of the State Board of Health.

Dr. McDonald asked if there was no way by which the paper could be sent among the people, that in the Transactions it would reach only the profession.

Dr. Wood suggested that Dr. Hodges make extracts from his paper and that the Board of Health would see that it is widely distributed.

On motion the meeting adjourned.

Second Day—Morning Session.

The meeting was called to order at 9 : 45 o'clock.

Dr. Thomas F. Wood presented the following report from the Committee on Rules for the election of Medical Examiners, which was unanimously adopted :

Scheme for Facilitating the Election of the Board of Medical Examiners.

Your committee appointed to suggest a scheme to facilitate the election of the Board of Medical Examiners respectfully submit :

(1). Nominations shall be made in open meeting, and if seconded must be recorded on the blackboard by the Secretary. The Society can at any time declare nominations closed. Voting shall be by ballot. Each member must on the first ballot vote for seven names and no more.

(2). A majority of votes cast is necessary to an election. After counting the first ballot the candidates shall have precedence as

follows: The three candidates having the highest majority vote shall be selected to serve for six years, the two having the next highest majority are to serve four years, the next two having the next highest majority to serve for two years.

(3). Should there be no election, or if the entire Board be not elected on the first ballot, a second ballot shall be proceeded with, dropping as many of the lowest candidates as the Society shall determine. No dropped candidate shall be renominated until one election shall have ensued between his first and second nomination.

(The Secretary read invitations for the Society to visit the Orphan Asylum and a ball to be given this evening.)

Dr. Satchwell moved that a committee be appointed to report on a plan for collecting the facts asked for by Dr. Joseph Jones, of New Orleans, as to the medical staff of the Confederate Army.

Dr. Lilly offered as a substitute the following preamble and resolution:

Confederate Records of the Medical Department.

Whereas, A movement is on foot under an organization known as the Association of United Confederate Veterans whose objects are to secure, among other things, the following items: (1) Name, age, nativity, date of commission in the Confederate Army, nature and length of the service of each, and every member of the medical corps of the Confederate States Army. (2) Obituary notices and records of all deceased members of the medical corps of the Confederate Army. (3) The titles and copies of all field and hospital reports of the medical corps of the Confederate Army. (4) Titles and copies of all published and unpublished reports relating to military surgery and all diseases of armies, camps, hospitals and prisons. The object proposed to be accomplished by the Surgeon General of the United Confederate Veterans is the collection, classification, preservation and final publication of all the documents and facts bearing upon the history and labors of the medical corps of the Confederate States Army during the civil war of 1861–'65. Everything which relates to this critical period of our national history which shall illustrate the patriotic, self-sacrificing and scientific labors medical corps of the Confederate States Army, and which shall vindicate the truth of history should be industriously collated, filed and finally published. It is believed that invaluable documents are scattered over the whole land, in the hands of the survivors of the civil war of 1861–'65, which will form material for the correct delineation of the medical history of the corps which played so important a part in the great historic drama. Death is daily thin-

ning our ranks, whilst time is laying its heavy hand upon the heads of those whose hair is already whitening with the advance of years and the burden of care. No delay, fellow comrades, should be suffered in the collection and preservation of these precious documents. This task of collection of all documents, cases, facts relating to the medical history of the Confederate Army invites the immediate attention and coöperation of his honored comrades and beloved compatriots throughout the South.

JOSEPH JONES, M.D.,
Surgeon-General United Confederate Veterans.

Resolved, That a Committee of five Confederate veterans be appointed to set on foot a systematic plan to secure the records of the medical department of the late Confederacy.

Dr. Satchwell withdrew his motion and the resolution of Dr. Lilly was adopted.

The Committee on Credentials reported the names of Drs. John L. Ray, of Burnsville, and R. B. Henderson, of Weldon. Report received.

The President announced that the hour had arrived for the election of a Board of Medical Examiners for the State of North Carolina as provided in the special order of business.

On the call for nominations the following were made:

Dr. Geo. Gillett Thomas, of Wilmington, by Dr. Thomas F. Wood; Dr. Julian M. Picöt, of Littleton, by Dr. C. J. O'Hagan; Dr. Julian M. Baker, by Dr. John McDonald; Dr. Wm. H. Whitehead, of Battleboro, by S. S. Satchwell; Dr. W. H. H. Cobb, of Goldsboro, by Dr. Hadley; Dr. W. J. Jones, of Goldsboro, by Dr. W. C. Galloway; Dr. W. H. Lilly, of Concord, by Dr. J. E. Ashcroft; Dr. Allmand Holmes, of Clinton, by Dr. Hill; Dr. J. W. McNeill, of Fayetteville, by Dr. W. C. McDuffie; Dr. Robert S. Young, of Concord, by Dr. Burton; Dr. A. B. Pierce, of Weldon, by Dr. Zollicoffer; Dr. R. L. Payne, Jr., of Lexington; Dr. S. W. Battle, of Asheville, by Dr. H. T. Bahnson; Dr. G. W. Purefoy, of Asheville, by Dr. Whittington; Dr. Dunn, of Raleigh, by Dr. G. A. Foote; Dr. J. H. Way, of Waynesville, by Dr. Wilson; Dr. Geo. W. Long, of Graham, by Dr. Robert S. Young; Dr. John McDonald, of Washington, by Dr. Geo. A. Foote.

No more nominations being made, they were declared closed.

Dr. Pierce asked to withdraw his name, but it was objected to by his nominator and was not done.

Dr. McDonald withdrew his name.

The President appointed as tellers Drs. R. J. Noble, J. A. Hodges, E. B. Zollicoffer and ——— Wilson.

Dr. Thomas F. Wood asked for the reading of the report of the Committee on Rules for the election.

Read by the Secretary.

On motion, the special order was waived to receive a report from the Committee on Credentials on the name of Dr. E. R. Michaux, which was accepted.

On motion, it was allowed members of the Board of Examiners who could have only a few minutes to be present to cast their votes at any time before the vote was counted, and the President ruled the same privilege be accorded all members who had just arrived in town.

The first ballot resulted as follows. Total number of votes cast 133—necessary to a choice 67. Of these :

Dr. L. J. Picöt received	110	votes.
" W. H. Whitehead,	93	"
" G. W. Long,	89	"
" Robt. S. Young,	88	"
" Geo. Gillett Thomas,	80	"
" Geo. W. Purefoy,	78	"
" R. L. Payne, Jr.,	74	"
" J. M. Baker,	58	"
" J. W. McNeill,	58	"
" S. W. Battle,	40	"
" W. H. H. Cobb,	34	"
" J. B. Dunn,	34	"
" I. W. Faison,	33	"
" W. H. Lilly,	26	"
" Allmand Holmes,	25	"
" A. B. Pierce,	24	"
" W. J. Jones,	23	"

The seven receiving the highest number of votes were declared elected, the first three to serve six years, the next two to serve four years, and the next two to serve two years.

The President announced the following Committee on Nominations : Drs. Frank Duffy, R. S. Young, W. H. H. Cobb, F. C. James, J. A. Hodges.

Dr. Bahnson rose to make an appeal in behalf of a very worthy member, one whom all his confreres will remember with pleasure—

Dr. G. G. Smith, of Concord. He has occupied many positions of honor. On account of age he has not been able to attend the meetings. He sends his dues and requests to resign. He thought it would be a shame to allow this, and moved that Dr. Smith be elected an Honorary Fellow of this Society, with all the privileges of an active member, but excused from all dues.

The motion was unanimously carried by a rising vote.

The President stated that the hour had arrived for the Conjoint Session with the State Board of Health, and Dr. H. T. Bahnson, President of the Board, assumed the chair.

Conjoint Session.

The Conjoint Session was called to order by the President, who said he had prepared no set address, but wished on behalf of the Board of Health to state a few matters of moment to the Society, and more particularly to the Board.

We come before the Society in a measure as beggars. Each member of the Society, from the fact that the Board is a creature of its making from its very infancy, must take more or less interest in the affairs of the Board. Without the coöperation of the Society, and especially the individual members, the Board of Health, according to the present legislation, is practically powerless. We are merely advisory, not executive. Our powers are limited and our appropriations still more limited.

To properly reach the laity throughout the State, on whom our efficiency entirely depends, we must look to the Society for aid and support. He wished to speak of two points in that connection :

First, the absolute necessity of more efficient means of collecting the nature of prevalent diseases, vital statistics, etc., throughout the different counties in the State, and particularly the larger towns and cities. Many counties are entirely without boards of health. Many of the towns and cities of the State, from two to five, and even ten thousand population, have no system of vital statistics. It is of paramount importance in this day and time, when we are seeking the immigration of the better class of natives, inhabitants of less salubrious, less genial States, that correct ideas of the sanitary conditions of our various towns be properly tabulated and dis-

seminated for the information of those who would come among us. To do this we must look for individuals to stir up the authorities of the towns to secure statistics, especially of deaths. There is not a physician representing any town who has not some amount of influence, and he thought they could use this to bring about this much desired reform. He asked the aid of members of the Society in collecting this greatly desired and needed information.

Second, the importance of bringing before the public the fact that we have a Board of Health, even though only advisory.

Every member of the Society is indirectly a member of the Board, and therefore the appeal comes home to each one. Throughout our State there is a tendency at present to build large private and public edifices of various kinds. The Board of Health has been applied to in relation, he was happy to say, in the building of one educational institution, to inspect and commend or condemn, as may be, the plans of that building from a sanitary standpoint. He alluded to the new Trinity College to be erected in Durham. The importance from a financial standpoint to the institution of such an indorsement on the part of the Board of Health cannot easily be calculated. The statement in the prospectus of catalogues that the plans are indorsed by a recognized body of sanitarians cannot fail to yield a most remunerative return for the little trouble that is expended in securing the services of the Board.

Another institution about to be built has likewise applied. He would urge the aid of members of the Society, so far as it lay in their power, to induce people building private residences, and more especially schools, etc., to have them built under the supervision of themselves, or that the willingness of the State Board of Health to give their services be made known to them. The idea he wished to emphasize on this occasion was to make the Board something more than a mere figure-head in the eyes of other States, and even in our own. It must be brought prominently into notice, and this is the only way we have of doing so.

Dr. O'Hagan thought the ideas of Dr. Bahnson of the highest importance to the whole State, not only from a sanitary standpoint of view, but also financially. From all portions of the United States, and especially from the North constant inquiries are made by persons wishing to come to this section as to the healthfulness of the State. While we can boast of an excellent climate, we are,

nevertheless, unable to give that accurate information that inquirers demand, and yet, by a simple act of legislation, it would be possible to meet this requirement. He thought the very first step was to have a law passed requiring the registration of marriages, births and deaths. By this means we could arrive at a pretty correct idea as to the health of the State. We could also find out the preventable causes of disease and apply the proper preventive measures. He was glad to know that the Board was willing and empowered to give their aid in the proper construction of private and public buildings, but regarded the securing of some legislation of the first importance. In all countries claiming any pretensions to civilization you find these laws. In almost every State there has been an effort to obstruct all such legislation. There is no reason why that should be, and combined effort on our part would be productive of much good. He thought it would be possible to drive into the heads of those who will represent us in the next Legislature the importance of this thing. Let us call to their attention the financial benefits that would result. Remind them that the first question of an expectant immigrant is as to the health, water and sanitary precautions. The legislation will be the easier because we are not asking for money. He asked the opinions of the Secretary.

The Secretary of the Board, Dr. Thomas F. Wood, then made a report of the work and progress of the Board, the report being mainly in the form of statistical tables. He was gratified at the growth of the Board, which is now recognized by all the Boards of Health of all the States and larger cities in the Union. This is evidenced by the rapidly increasing library of the very valuable reports sent out by the different State and municipal Boards of Health. The time has come when we may expect more and more fruits.

As regards the matter of vital statistics, he believed that Wilmington and Raleigh* are the only two towns in which strict report of death is made, but asked to be corrected if he were wrong. In these towns the municipal laws require that the undertaker and the cemeetry authorities must have a certificate of death before burial. As an argument for the enactment of such a law is that an application for burial permit without a certificate would raise a suspicion of death by foul means.

He attributed to the publication of the *Bulletin* the satisfactory

*The Society now adds Charlotte, Asheville, and others, perhaps.

growth of the Board, saying there is nothing like printer's ink to inform the public of what we are doing, and the Board has used it lavishly. These tables will be printed and put into the hands of all the members, and they will see how the Board has induced, to use a mild term, the county authorities to improve the condition of public buildings.

He called attention to the prompt remedy the Board offers in time of the incursion of such disease as yellow fever, cholera or small-pox. The State has placed a contingent fund of $2,500 at the disposal of the Board for such an emergency. In case of the appearance of such a disease the Superintendent of Health would report at once to the State Board, who would send a committee and such assistance as was needed to stamp out the disease.

He mentioned the occurrence of glanders among horses in Wilmington about a year ago, when the State Board succeeded in blotting out the disease in two months. It is a disease not only destructive to animal life, but is also communicable to man, therefore it fell within the province of the Board of Health. The Agricultural Department had no provision for the arrest of glanders—a very surprising fact. The law of the State requires that animals so suffering shall be destroyed, but does not place the duty of determining the disease on any one. We had no expert to diagnose the disease, so it devolved upon the Board to employ an expert.

He hoped the profession of the State would be interested not only to do what might be asked of them, but that they would study the matter so as to be able to instruct members of the Legislature as to what the Board is doing and what we want. There are practical matters constantly arising, such as the healthfulness of drinking water. To make this plain, Prof. Venable has been studying the matter and will read a paper giving the result of his researches.

Some months since the Board received information of the appearance of cerebro-spinal meningitis in La Grange among the students in a boy's school. This county is without a Board of Health, but the State Board secured the aid of the local physician, Dr. Hadley, who had consented to make investigations in regard to the water supply and other hygienic conditions.

Dr. Hadley being present, stated he had received a day or two ago the returns of the chemist who examined the water, but he is not yet ready to report.

Dr. Wood continued, saying the Board had the authority to send experts to investigate such conditions, and could in this way be of great aid to schools.

Dr. Satchwell said he had adopted a novel way of getting a hearing on health subjects, by making arrangements with both political parties to give him the first fifteen minutes at every stump-speaking.

Dr. Venable, of the State Board of Health, read a paper on "The Sanitary Analysis of Water."

Dr. Thomas F. Wood thanked Prof. Venable for his aid in elucidating some of these questions about drinking water. He stated that the paper would be printed by the Board of Health and distributed to each member of the Society, and given as much prominence as possible in the secular papers.

In reply to a question concerning the care of the poor not in the Poor House, Dr. Thomas F. Wood considered it a matter that devolved upon the county.

On motion, the Conjoint Session adjourned, and the Society called to order by the President.

On motion, the special order of business for the hour immediately after convening in the afternoon was made the report of the Mortuary Committee.

Dr. Thomas F. Wood announced as the subject selected for discussion, "Are the Masses Passed after Large Doses of Sweet Oil Gall-stones?"

The paper was prepared by Dr. Burbank, of Wilmington, who was prevented from attending.

The meeting adjourned.

Second Day—Afternoon Session.

The Society was called to order at 3 : 15 o'clock.

On motion, the special order of business adopted at the morning session was changed to allow the reading of the report of the chairman of Section on Practice of Medicine, Dr. L. G. Broughton.

After the reading of the report it was, on motion, referred to the Committee on Publication.

The special order of business was resumed, and Dr. S. S. Satchwell read the report of the Obituary Committee, containing an

eulogy on the late Dr. Will. Geo. Thomas, ex-President of the Society.

Dr. Eugene Grissom said it would seem almost an act of supererogation to attempt to add a word of eulogy to that already pronounced upon the name of the great and good man who has passed from us. I will, however, as one having known Dr. Thomas since 1859, when, having just received my degree, I became a member of the Society, whose confréres, the great men of his day—Johnson, McKee, Manson and others—have crossed the river and are resting in the shade, and while my acquaintance with him was not intimate, it was unbroken from that period till his death. In view of these facts, it may not be amiss to pluck one laurel to place upon his grave. I knew him during the war, in its earlier months, when about Wilmington he was ever ready to contribute his skill and his labor to the benefit of the sick soldier without any regard to the sacrifice and labor it placed upon him and without reward. If there is any one object that seemed to be the great polar star of his life, of his ambition, the impression made upon my mind and the minds of those who knew him more intimately than I did, was his conscientious regard for duty—the grandest principle of the likeness to his character. He did his duty at all times and in all places, to all men, and he must have had within him a wealth of noble aftermemories of noble actions and hopes of the noble felicity. He went down to the grave calmly and without a fear. His example will teach upon earth while his spirit is with God.

He moved the adoption of the report, and that a page in the minutes of the Society be inscribed to his name. Carried.

[Note.—The Report of the Committee on Credentials is summed up in the final list of new members.]

Dr. Satchwell stated that he had another paper on the death of our late ex-President, Dr. W. T. Ennett, that was not yet completed, and asked to have it referred by title to the Committee on Publication. So ordered.

The President stated that in reference to the question of registration which was discussed yesterday, the Board of Examiners wrote to the Attorney General asking him the power of the Board with unregistered men in possession of diplomas issued prior to 1875—whether they had the power to grant them a license? The Attorney General telegraphed his opinion, which is, in substance,

that those who have not yet registered, but were eligible before the 1st of January, 1890, can obtain a certificate from the Board of Examiners giving them permission to register by sending to the Board a certificate, sworn to before the clerk of their respective counties, that they were qualified to register before the 1st of January.

Report of the Chairman of Section on Pathology and Microscopy.

Dr. Julian M. Baker read his report on "Progress in Pathology and Microscopy," which was referred to the Committee on Publication.

Dr. Thomas F. Wood read a paper forwarded by Dr. Thomas S. Burbank (who was absent) on "Are the Masses Passed after the Administration of Large Doses of Sweet Oil Gall-stones?"

Dr. Wood hoped the paper would be largely discussed, knowing how much interest has been lately felt in the subject by the medical public, and how ably Dr. Burbank was prepared to defend it were he present.

Dr. Payne became interested in the subject a few years ago, and as gall-stones are most common in fat women, when one came to his office with symptoms at all pointing to that trouble, he always administered large doses of sweet oil, and always with the passage of these green masses as a result. There was never a failure, and thought he could get a like result from any member present. He thought the masses supposed to be gall-stones were formed in the bowels by the emulsification of fats.

Dr. Thomas F. Wood had had quite a number of cases of indubitable hepatic colic. The oil was not supposed to relieve pain, of course, and was not given until this had been relieved by opium. After action of oil you get several substances besides gall-stones. He thought the large green masses are bile soap, but in cases of genuine hepatic colic there are in addition fragments of white particles sometimes stained a dirty green color. These white masses separated from the green ones give the reaction for cholesterin. It is not certain that these masses come from the gall-bladder, but it is certain that we get fragments of cholesterin mixed with the green masses. He has seen along with these masses clearly defined gall-stones. He held that whether sweet oil could or could not cause the expulsion of gall-stones from the bladder, in well-selected cases

we certainly get fragments of cholesterin, and often permanently relieve our patients. We know that there are sometimes enteroliths in the bowels, and that they probably have their origin in the gall-bladder. Could not the cholesterin come from the oil? Not if the oil is pure. There is no doubt that sweet oil has a cholagogue effect, as shown in a paper in the *Therapeutic Gazette* for May, 1890.

Dr. Payne called attention to the fact that the pain was due to the passage of the stone through the hepatic duct, and when the oil was given after the pain had ceased, the stone being already in the bowel was easily carried out.

Dr. Thomas F. Wood referred to the intermittence of the pain in obstruction, and to the fact of post-mortem examinations frequently revealing the fact of the gall-bladder being packed with gall-stones without there having been any evidence of hepatic obstruction or colic during the life of the subject.

Dr. Payne attributed the intermittence of pain to the occasional passage of a stone.

Dr. Wood thought that if a patient is suffering intermittent pains and during an interval a dose of oil is administered with the passage of these fragments and a relief from future pains and clearing up of the icteric skin and sclerotics, it is proof of the efficacy of the oil in removing them.

Dr. Roberts mentioned a case in which a drinking man subject to bilious colic had had several attacks in a few months. He ordered a large dose of oil and the man was relieved from further trouble.

Dr. Nicholson had tried it in only one case without satisfactory results.

Dr. Monroe thought the oil acted only as any purgative would act, likening it to calomel and castor oil. He would like to see the effect of the administration of half a pint of castor oil.

Dr. McDonald mentioned the case of a large man who had suffered for weeks with gall-stones. After trying other things he gave sweet oil and ether, and he passed a great many of what he considered gall-stones, being marked by facts, the patient recovering and having no more trouble. He has had good effects from it many times in duodenitis. He believed it did remove stones in some cases.

Dr. Poole referred to a paper presented in his county Society (Rowan) in which the following facts were disclosed: A patient

having a fistulous opening into the gall-bladder passed three stones through the opening. The writer analyzed these along with the masses passed from another patient after a dose of oil and the results were identical. A member of his own family had suffered a long time, and was finally relieved after two doses of oil.

The President said he was now in charge of a patient who, a few years ago, weighed only 80 pounds, now weighs 130. At that time he suffered from repeated attacks of hepatic colic. The stone was easily detected by touch through the thin abdominal walls. The attacks were accompanied by the filling of the bladder with bile. Gave sweet oil in doses of 8 ozs. in three of these attacks after emptying the bowels by a saline purgative. The masses that came away were always green-looking, like pieces of cucumber pickle, covered with mucus. The outline of the bladder was lost. He thought the oil in such large doses rushed through the stomach, and by its rapid action caused the emulsification of the bile. The stone could still be distinguished in the bladder. It was about the size of the end of his ring finger. He had come to the conclusion that the green masses were composed of oil acted on by the bile and pancreatic juice—not sufficiently emulsified for absorption and rushed through the bowel in that partially emulsified state. The passage of stones from the bladder would have caused great pain unless the ducts had been enormously distended.

The President appointed on the committee to collect statistics concerning Confederate veterans, Drs. E. Burke Haywood, S. S. Satchwell, Chas. J. O'Hagan, John McDougald, Thomas F. Wood.

Report of Committee on Therapeutics and Materia Medica.

Dr. J. W. McGee, as chairman of Section on Therapeutics and Materia Medica, made his report, which was referred to the Committee on Publication.

Report of the Committee on Nominations.

Dr. Young presented the following report of the Committee on Nominations, which was adopted :

President.—Dr. Richard H. Lewis.

Vice-Presidents.—Drs. S. W. Battle, J. L. Nicholson, W. H. Lilly.

Secretary.—Dr. J. Mack Hays.

Treasurer.—Dr. C. M. Poole.

Orator.—Dr. L. G. Broughton.

Essayist.—Dr. T. E. Anderson.

Committee of Publication.—Drs. Thomas F. Wood, W. W. Lane, J. M. Hays, Thomas S. Burbank.

Delegates to the Virginia Medical Association.—Drs. P. L. Murphy, A. R. Zollicoffer, J. M. Baker, L. L. Sasser.

Obituary Committee.—S. S. Satchwell, J. D. Roberts, W. J. Jones, George A. Foote.

Delegates to the American Medical Association.—Drs. Chas. J. O'Hagan, A. W. Knox, J. W. NcNeill, Thomas Hill, Thomas F. Wood, N. B. Herring, R. F. Lewis, S. D. Booth, Joseph Graham, John Manning, E. R. Michaux, J. M. Hadley, W. D. Pemberton, James S. Lafferty.

Delegates to the Tenth International Congress.—J. A. Hodges, A. G. Carr, Robert S. Young.

Dr. Anderson read a paper on "Extra-Uterine Pregnancy of Five Years Standing," which was referred.

On motion, the reading of a paper by Dr. Hyatt was made the special order of business for to-morrow morning.

Dr. A. G. Carr's Credentials to the International Medical Congress.

It was moved and decided that Dr. Carr's credentials as a delegate to the International Medical Congress be forwarded to him.

A Case of Typhlitis.

Dr. L. G. Broughton made a verbal report of a case of typhlitis. He was sent for with a message to bring his instruments. He found a man who had not had an action of the bowels for three weeks or more. He had been under the influence of opium for pain in the right iliac region. An examination per rectum revealed a distinct tumor on the right side. He advised an operation for obstruction. Pulse was 125, and had the appearance of a dying man. Thought it impossible to carry patient through to next day, so the abdomen was opened about three inches between umbilicus and pubis. On

opening the abdomen a great quantity of very fetid liquid gushed out, so that he was afraid he had wounded the gut. Strict antisepsis was practised all through the operation. Found three very tough fibrous bands binding the bowel down, which were with difficulty broken down. The gut was drawn out and appendix found to be in a gangrenous condition and five or six times as large as usual. It was ligated and amputated. The cavity was washed out with a solution of bichloride, 1—4000, a drainage-tube put in and the wound closed. The appendix was found to contain a cherry seed, the surface being serrated as though it had been filed. His wife then gave the following history: During the past summer he had eaten some cherry pie and soon after complained of pain in the right side which had been troubling her ever since. Next morning patient was feeling better than for some time and bowels had moved three times. He administered hot water only by the mouth for two days, then milk and lime-water in small quantities. Temperature never exceeded $100\frac{1}{5}°$, and in about two months was up and attending to his business. Soon afterward, while driving in a cart, the horse became frightened and he was thrown out upon his right side. He complained of great pain and his family physician called, but he died before morning.

Opium Habit Among Negroes.

Dr. Roberts spoke of the infrequency of the opium habit among negroes, saying he had been able to collect three well authenticated cases.

Dr. Booth mentioned a case in a negro woman who had had the habit about eight years and was using 4 grs. of morphia daily. She became pregnant, and after the birth of the child never used any morphia again.

Dr. Galloway mentioned a case in his experience.

Dr. Nicholson had seen only one case in his ten year's practice.

Dr. Noble read a paper on "Opium Habit Presenting some Unusual Difficulties in Diagnosis," which was referred to the Committee on Publication.

Ought a Serious Surgical Operation be Performed on an Opium Habituê?

Dr. Holmes asked the opinion of members as to the propriety of

performing a serious operation on a person with the opium habit. He thought it should not be done unless there was some prospect of curing the habit.

Dr. Littlejohn Made an Honorary Fellow.

Dr. O'Hagan moved that Dr. Littlejohn, who has been a confirmed invalid for some time, be made an Honorary Fellow of this Society, enjoying all the privileges of an active member, but being relieved from all fines and dues.

The motion was carried unanimously.

A Vesical Calculus Weighing 7¾ ozs. Removed by the Rectum.

Dr. O'Hagan presented a calculus 3½ inches long, 3 inches wide and 1½ inches thick and weighing 7¾ ozs., and gave the following brief description of the case: The patient came to him a lean, cadaverous fellow, last July, and asked him if he could do anything for paralysis. On being answered in the negative, he started to leave in great despair. Called him back, examined the bladder, discovered the presence of a calculus which he supposed to be about an inch and a half long, and told the man he could get relief only by an operation. The man consented, and, after a few days of preparatory treatment, was operated on. The main reason in reporting the case was to warn against too careless examinations in these cases as to the size of the stone. He made two examinations, but not as careful ones as he should have made, and was so dumbfounded when he found he could not extract the stone through the perineal opening. A young medical friend came to his assistance, and in working at the stone with a pair of forceps, succeeded in pushing the forceps through the vesico-rectal septum.

The operation was done a week before last Christmas. Did not think the patient could stand an extra operation for supra-pubic lithotomy, so he was sent home. To his very great surprise patient did well, and the wound in the perineum healed kindly. He concluded to try removal through the rent in the bladder, and the man being anæsthetized, the sphincter was stretched and the stone was found presenting at the opening. It was removed with very little trouble, and the opening has decreased to a small fistula which will

require an operation. The patient was thirty-eight years old, and had been suffering from infancy.

Fluoresceine in Detection of Foreign Bodies and Ulcers of the Cornea.

Dr. Thomas F. Wood presented a sample of fluoresceïne, a new preparation (reported in *Johns Hopkins Bulletin*) that will prove of use in detecting lesions of the cornea. It is a yellow powder, a preparation from resorcin. It is soluble in water and makes a yellow solution with green fluorescence. It acts by temporarily staining the eye where the conjunctiva is injured. It stains a temporary yellowish color, and is entirely harmless. Samples were distributed for experiment.

A Case of Tobacco Amaurosis.

Dr. Lewis mentioned a case of tobacco amaurosis seen only a few hours before, and would like to speak of the diagonis of the disease. There are no objective symptoms, no pain, only an increasing loss of sight. He considered the presence of the "color-point" as absolutely diagnostic. In this case no benefit at all was received from the use of glasses. The patient was placed before him and directed to look at a piece of red paper which the examiner placed on his own nose. It appeared yellow to the patient. but when moved gradually to one side, the patient's eyes still fixed on the nose, it suddenly appeared red at a distance of about two inches from its former position. The same result was had from using green paper. The patient was an inveterate smoker and chewer. Treatment was simple—to give up the use of tobacco entirely.

Glasses for a Myope.

In response to a question Dr. Lewis said a simple and convenient method of ascertaining the strength of glasses needed by a simple myopic patient was to ascertain the maximum distance at which he could read very small type comfortably. If a patient is to wear glasses permanently they should be slightly weaker than than that.

Dr. O'Hagan read the following report from Dr. L. L. Staton :

A Case of Oblique Fracture with Shortening, Treated by Refracture and Readjustment—Result: Limb Lengthened 2 Inches.

The remarkable thing about the case was the reproduction of

bone, the ends of the bone, after exsection, being some two inches apart and held there by an extension weight.

Referred to the Committee on Publication.

On motion of Dr. Way, the selection of the next place of meeting was made the special order of business for the hour immediately following the oration at the evening session.

Second Day—Evening Session.

The Society was called to order and the President introduced Dr. W. J. Jones, of Goldsboro, who delivered the

The Annual Oration.

After the oration a copy of it was requested for publication.

The selection of place of next meeting being in order, Dr. Broughton suggested Asheville, even though it had been more than half promised to Reidsville.

The nomination of Asheville was seconded by Dr. Purefoy, who hoped the Society would take Horace Greeley's advice to young men and "go West."

Morehead City was put in nomination by Dr. Foote, as being a central point and abounding in brain food. He thought the Society would be none the worse for the addition of a little phosphorous to their diet.

Dr. Galloway nominated Snow Hill. Snow Hill, he said, was once the proud capital of North Carolina. She is beautifully situated on the right bank of the classic Moccasin river, abounds in beautiful walks, lovely scenery and magnificent structures. (Applause and laughter.)

Dr. Foote asked if Snow Hill was in North Carolina. (Laughter.)

The vote being taken, Asheville was selected as the next place of meeting, and, on motion, the last Tuesday in May was appointed as the time of meeting.

An amendment to make the time the second Tuesday was lost.

On motion, the meeting adjourned.

Third Day—Morning Session.

The Society was called to order at 9 : 30.

Dr. Lilly made the following report of the Finance Committee, which was received :

Your Committee having examined the Treasurer's accounts, find them correct, as follows :

To balance on hand from last year	$ 765.60
To amounts collected	509.40
Total	$1,275.00
Expenditures by vouchers, etc	$ 799.20
Balance on hand	$ 475.80

The Committee recommend an assessment of $2.00 for the ensuing year, and that the salary of the Secretary be $125 and that of the Treasurer be $100 for next year.

Your Committee feel that the thanks of the Society are due our efficient Treasurer for the satisfactory manner in which he has discharged the duties of his office.

W. H. Whitehead,
W. H. Lilly,
G. W. Purefoy. } Finance Com.

The reporter was voted $25.

Dr. Hays said he had failed to call for a paper prepared by Dr. Herring, and asked that it be presented now.

Dr. Herring said he had decided to wait and study the subject another year before presenting his paper.

A paper by Dr. Satchwell, on "The Influence of the Teeth on Health," was ordered read by title and referred to the Committee on Publication.

Dr. Thomas F. Wood, as chairman of the Committee on Revision of United States Pharmacopœia, made his report as follows :

Report of the Committee Delegated to Represent the Medical Society of North Carolina in the Sixth Decennial Convention for the Revision of the Pharmacopœia of the United States.

Two of your Committee, Dr. Robert S. Young and the Chairman attended the Pharmacopœia Convention held in Washington, D. C., on the 7th, 8th and 9th May. The delegation was a larger one than

any of its predecessors, including some States never before represented. The South had the fewest of all, and among them only two physicians from North Carolina and two from Virginia. From all the States the strongest element was the pharmacists and chemists, many bearing the title of M.D., but few in reality being active medical practitioners. This defect in the organization of the Convention has been marked from the organization of the movement, and accounts largely for the production of a volume that has never been popular with the physicians. So far from being popular, indeed, it needed so much in the way of commentary that the only acqaintance the majority of physicians had with it was the extracts made in the various dispensatories.

The machinery for the determination of the qualificattion of delegates was imperfect, and put some of them to much annoyance before they could obtain admission to the floor of the Convention, notably your own delegates.

The retiring President of the Convention of 1880, Dr. Robert Amory, of Boston, called the meeting to order.

The discussions on the various questions of interest to the Convention had been before the pharmacal profession some months in their special journals, so that the views held by each member were well digested beforehand. The old Committee of Revision and and Publication set forth "The General Principles which are to Guide the Committee of Revision for 1890," it being their prescribed duty, and upon this report hinged all the discussion.

The field of discussion of the first day was the question, whether or not crude drugs and the preparations from them should be standardized. There had been for some months previously set forth, by circulars and other media, the idea that as the drugs and preparations from them administered to our patients are liable to vary so much in their proportions of active principles, that it was a growing necessity that some standard should be adopted whereby we could all have a guarantee that when we gave ergot, or fluid extract of digisalis, or extract of conium, or any other drug having an important active ingredient, that we might have some demonstrable test, whereby we could determine whether or not our patient was getting in that drug his just proportion of the active ingredients. The discussion was confined to the pharmacists, and it was surprising to see that those who entered it with some warmth of conviction as

to the feasibility of the plan, were willing finally to adopt the principles set forth by the Committee of Revision of 1880, as follows:

"*Assay Processes for Drugs.*—It is recommended that assay processes be appended to the descriptions of the more energetic or otherwise important drugs containing active principles, provided the therapeutic value of the drug depends upon the amount of these principles, and provided, also, that these principles can be assayed and identified with reasonable accuracy and without requiring complicated processes. The committee shall attach a note stating the average percentage of these active principles in good commercial samples of the drug, and, if it be found feasible, it may attach a requirement that, if the percentage passes certain upper or lower limits, the drug be rejected.

"*Assay Processes for Galenical Preparations.*—The committee may attach assay processes to such galenical preparations, as fluid extracts, tinctures, etc., but it shall omit requirements of a definite strength or percentage of active principles except in the case of drugs for which an upper or lower limit, or both, of active principles is prescribed.

"*Assay Processes for Opium and Cinchona.*—In the case of opium and cinchona, the committee shall adopt such processes of assay as will be found to yield the largest proportion of the desired active principles with greatest uniformity and with least manipulative difficulty, the object of these processes being to ascertain how much of the respective principles can practically be extracted."

Proprietary or Patented Articles.—Upon this point we are all interested, and it is the most perplexing matter that has come before the medical profession in the last ten years, and to solve it will take all the combined wisdom of the medical and pharmacal professions in the next few years.

The phraseology of the Committee of Revision of 1880 is as follows and expresses the utmost limit of the wisdom so far evolved:

That no substance which is exclusively produced by a patented process, or is protected by proprietary rights, shall be admitted into the Pharmacopœia.

It must be explained that there are several substances largely in use as medicine that are produced now as they appear in market, almost exclusively by patented processes, although they may be, and were formerly made by an open process of the Pharmacopœia.

Two, notably, are salicylic acid and chloroform; these would not be restricted by the terms of the committee. But such articles as antipyrin, antifebrin, exalgine, sulphonal and the many other new chemicals are not only exclusively made by a patented monopoly, but are copyrighted, and after the patent expires they cannot then be admitted into the Pharmacopœia. What are we to do with such substances? They are in daily use by the profession of the world, many of them will probably be permanent. It occurs to your committee that the next Committee of Revision of 1890 should be directed to determining the chemical nature of the more useful of the anilid preparations, discover, if possible, other processes for them, and if accomplished add each new one to the Pharmacopœia under such name as the committee might decide upon, and treating the chemical as any other of the older substances. It might even then be the case that the new processes discovered may be too expensive to enable the chemists to put it in competition with the original chemical, but by this method it would have a legitimate place in our official lists on the same footing with chloroform and salicylic acid.

Parts by Weight and the Metric System.—The committee of 1880 adopted parts by weight for fluids and solids, but it was not practiced by the druggists generally. The new rule suggested is weights for solids, measures for liquids, the standard for both being the metric system of weights and measures. At first sight it would seem to you that this involves the employment of dosage upon the basis of the metric system, and you would naturally express your disapprobation. It does not, however, affect any of the old rules about dosage, for the Pharmacopœia does not consider this topic, it only affects the preparation of drugs by the druggist and the manufacturing chemist. Instead of having two or three standards, they employ a standard which will thus make it uniform everywhere. It is not expected that the druggists in the smaller towns will at once adopt the decimal system, but after they find out how cheaply they can substitute metric weights and measures for the old apothecaries and avoirdupois they will fall into it, and all the easier, as persons used to calculating in a decimal currency as we are, can soon see the convenience of it all. As we have already stated, the question of prescription-writing does not come up just now, but may in another decennium.

What we have reported cover about all the matters which specially interest us as physicians, and those of us who have to be in addition, our own druggists.

Prof. H. C. Wood, MD., LL.D., was made President of the Convention, and the Committee on Nominations, after being in continuous session from 8 p. m. until 2 o'clock next morning, chose the following gentlemen to compose the Committee on Revision for 1890, and to this number was added Dr. H. C. Wood :

Those marked * were of the committee of 1880.

*Charles Rice, Ph.D., New York, Chairman; *Prof. Joseph P. Remington, Philadelphia; Prof. F. B. Power, Wisconsin; *Prof. P. W. Bedford, New York; Dr. W. M. Mew, U. S. A.; Dr. John Godfrey, U. S. M. H. S.; Dr. J. M. Flint, U. S. N.; *Prof. J. M. Maisch, Philadelphia; Dr. C. O. Curtman, St. Louis; *Dr. F. A. Castle, New York; Dr. N. S. Davis, Jr., Chicago; *Prof. C. Lewis Diehl, Louisville; Dr. R. G. Eccles, Brooklyn; Dr. W. G. Gregory, Buffalo; Carl Mohr, Ph.D., Mobile, Ala.; *Prof. G. F. H. Markoe, Boston; *Prof. Oscar Oldberg, Chicago; Prof. L. E. Sayre, Kansas; *Prof. Otto A. Wall, St, Louis; Dr. H. H. Rusby, N. Y.; Mr. A. B. Taylor, Philadelphia; Dr. R. T. Edes, Washington; Prof. C. S. N. Hallberg, Chicago; *Dr. Thomas F. Wood, Wilmington, N. C.

The Convention was harmonious and worked with great assiduity. The prospect is that the new committee, aided by the immense work of the old in securing and publishing a digest of criticisms upon their work, will be started forward in a successful line, and will be able to complete the whole in about a year. It behooves every one of us, therefore, to consider what suggestions he wants to make as to the addition or elision of drugs, and communicate such facts to the member of the committee from this Society or directly to Mr. Charles Rice, the chairman.

It is the earnest hope of the medical members of the committee that the Pharmacopœia will be a very necessary book to the profession in its next revision, and to this end they bespeak your hearty coöperation.

Respectfully submitted,

THOMAS F. WOOD,
ROBERT S. YOUNG,
Committee.

Oxford, N. C., 28th June, 1890.

On motion, the report was received and the Committee dismissed.

Dr. J. W. McNeill introduced the following resolution regulating the election of officers :

Resolved, That the election of officers for this Society, in the future, be by ballot, and that all laws and by-laws conflicting with this resolution be repealed.

Laid over until next meeting.

Dr. Purefoy asked to have his paper read by title and referred to the Committee on Publication.

So ordered.

According to the special order of business adopted at yesterday's session, Dr. Hyatt read a paper on "Electricity in the Treatment of Uterine Disease."

Referred to the Committee on Publication.

A paper on "Electricity in Gynecology," by Dr. ————————, was read by title and referred to the Committee on Publication.

Dr. Thomas F. Wood asked Dr. Hyatt's views as to the best way for a beginner to provide himself with an electrical outfit that he might make a study of its application. He also asked what make of milliampéremeter he considered best. He thought the profession was at the mercy of the electricians, who could send out any kind of machines, and when the results from their use were nil or unsatisfactory, the treatment fell into disrepute, while we know that good results are obtained from it.

Dr. Hyatt recommended that one should first learn to make a battery for himself. He would recommend the "Dead Beat" milliampéremeter, made by the Galvano Manufacturing Company, New York. He offered to write a paper on the subject to be published in the JOURNAL.

Dr. Hyatt read a communication tendering his resignation as a member of the Society. He explained that he hoped not to discontinue his attendance on the meetings, and hoped his resignation would be accepted.

With some protests from members the resignation of Dr. Hyatt was accepted.

Dr. Whittington read a paper on "Fibroids of the Uterus," which was referred to the Committee on Publication.

The President appointed on Dr. Poole's resolution the following

Committee: Drs. C. M. Poole, T. D. Haigh, J. J. Summerell, Thomas F. Wood, R. H. Lewis.

The time having arrived for the installation of the new President, Drs. Wood and Lilly were appointed to conduct him to the Chair.

In tendering the gavel to his successor President Thomas said: "Fellow-members of the North Carolina Medical Society, I congratulate you upon the wisdom of your choice for your next President. It is a feeling of great satisfaction to the out-going administration that if any shortcomings have marred its progress they will be effaced by the administration we will now inaugurate."

President Lewis replied as follows: "If I can succeed in administering the affairs of the Society as well as my predecessor I will be more than satisfied. I would be less than human if I did not feel deeply flattered by this evidence of your partiality. To be the recipient, at my age, of such an honor from such a body of men as the Medical Society of North Carolina, is a compliment exceedingly grateful to me. I have always taken great pride in the Society—its success and the elevation of the profession in the State have for years been very dear to my heart. Whenever an opportunity has presented it has always been my pleasure to strike a blow for those objects. By not abating, but by increasing every effort, in the future I hope to prove that your confidence was not misplaced. But to attain these ends I must bespeak your coöperation and support in an administration which I promise you to the best of my ability to lead without fear, favor or prejudice.

The President asked for any further voluntary papers.

A Case of Typhoid Fever.

Dr. Wilson said that during the past season he has had considerable typhoid fever. He asked for the opinion of the Society in regard to one case that puzzled him and his consultant no little. This case was one of unusual length and very mild as regarded temperature, but tedious. Ran on until about the fifth week with no extra emaciation, the temperature never unmanageable, but there arose a symptom for which he could discover no cause, and the result was something unusual. He would say the case recovered. In the fifth week pulse became very rapid, having been only moderate before. During the next two weeks it was never under 135 and often reached 145, while the temperature never exceeded 102°,

and rarely that much. He could not understand the cause of the disproportion between pulse and temperature. Patient lived near by, and he saw him frequently. The patient was never delirious. Attributes recovery to the fact that the stomach never gave way.

Antipyrin a Substitute for Tracheotomy in Diphtheria.

Dr. Robinson reported a case to which he was called to perform tracheotomy. The case was a little girl suffering from diphtheria. When he arrived the paroxysm had passed off to some extent. The case was left until the next morning, when it was no better, but still the attending physician thought it had better be put off a while longer. He was called for soon after and went prepared to do the operation. He explained to the father the dangers of the operation, but he concluded to have it performed. He suggested the administration of antipyrin in 5-grain doses every half hour until the physiological effect was produced. It had been given in the morning, but at intervals of two hours. Four or five doses were weighed out and administered before leaving. He told the attendant physician what he had done and the latter said: "Well, all chance is gone now, for that will weaken its heart." His object in giving the drug was based on his experience demonstrating to him the power of the drug in causing a free discharge from the mucous membranes of the trachea and bronchi. It had been demonstrated in a case of malarial (so-called typhoid) fever, in which 20 grains were administered with resulting cyanosis, which, however, was easily overcome by stimulants.

On seeing the little girl next morning found her breathing as naturally as he was and playing with her doll. Membrane commenced to form again about 12 o'clock, but the child would not retain the antipyrin. He performed tracheotomy the next morning, but the child died soon after. He suggested that if he had administered the antipyrin hypodermically with digitalis, the desired result would have been obtained. He thought that antipyrin could be carried to its full extent, and thought we might find in it a remedy for the disease. Has used antipyrin considerably and does not find it a greater heart depressant than antifebrine. It is a better nerve sedative. Had a case suffering from cardiac trouble accompanied by asthenia, in which antipyrin and the bromides gave more relief than morphia.

Dr. Thomas F. Wood read a paper on "Erhlich's Urinary Test for Typhoid Fever."

Dr. Wood's paper was referred to the Committee on Publication on motion of Dr. Way, who also asked to have it published in the JOURNAL at as early a date as possible, so that it might be used during the present typhoid season.

A Fractured Skull with History of the Cause of Death.

Dr. Hays presented a specimen of a fractured skull in which all three of the fossæ were fractured, one running through the orbit to the optic foramen, the other including the zygoma, passing through the petrous bone to the foramen magnum. Statistics say that in only 10 per cent. of all cases of fracture of the base do we find all three fossæ involved. The middle meningeal artery was ruptured and a clot weighing about 3½ ounces was found. The question arose as to the possibility of the man's ability to walk and talk rationally after the blow that caused the fracture. An answer was not given by any member.

The Object of the Registration of Physicians and Other Matters Relating to the Amended Law.

The President alluded to the discussion of the previous day in which it was brought out that many physicians had not registered. He thought the object of registration was not fully understood. It is simply to have a correct list of the physicians, whether regular or irregular, in order that the laws might be enforced against those that come after. Where before there were several classes, this reduces the number to two—those who have registered and are thereby eligible to practice and those who are not. He suggested that members interest themselves in their counties in getting those who have not registered to do so in the way laid down by the Attorney General. He suggested that a written opinion of the Attorney General be sent to every clerk in the State.

Dr. Way said he was the only member of the State Society in his county, and he therefore thought it his duty and appointed himself a committee of one to see that the laws were complied with. He found the names of two men whom he had never heard of before, and believing them to be illegally registered wrote to the

Attorney General as to the duties and powers of the clerks in the case of illegal registration. He answered that while it was not perfectly clear to his mind, he thought it the duty of the clerks to see that the applicants were qualified, and if he found the registration improperly made, he had the right, after due notice, to revoke the registration. He had the two men notified and one of them returned his license, the other claiming to have lost his. The man and six respectable citizens of his section were summoned to appear at court. This frightened the man, with the result that the license found its way to the clerk's office, and now both these certificates are cancelled. He thought a like interest on the part of all others would result in good and a more faithful observance of the law.

Chairmen of Sections.

The President announced the following gentlemen as chairmen of sections:

Practice.—W. H. Harrell.

Surgery.—Oscar McMullen.

Obstetrics.—W. P. Whittington.

Gynecology.—J. W. Long.

Materia Medica.—K. M. Ferguson.

Anatomy and Physiology.—W. A. Graham.

Pathology and Microscopy.—Albert Anderson.

Therapeutics.—W. H. Wilson.

State Medicine and Medical Jurisprudence.—J. M. Taylor.

Leader of Debate.

The President appointed Dr. W. C. Galloway Leader of Debate.

It is Illegal to Practice Medicine at all without being Registered.

Dr. Hays called attention to the fact that in Section 5 of the practice law the words "for fee or reward" are left out, making it illegal now to practice medicine or surgery at all unless registered.

Dr. Thomas F. Wood tested the specimen of urine given him from a patient with fever, and as it did not respond he felt safe in declaring that the patient was not suffering with typhoid fever.

Dr. Booth verified the test by stating that this morning he found the temperature had fallen nearly to normal and he looked for it to clear up entirely in a day or two.

Typho-Malarial Fevers.

Dr. Robinson asked Dr. Wood's opinion as to the nature of the continued fevers, or so-called typho-malarial.

Dr. Wood said in reply that quite recently Surgeon Kenyoun, of the Marine Hospital Service, had recently discovered in the intestine of a fever patient Eberth's typhoid bacillus, and had demonstrated the malarial plasmoid in the blood. If the presence of this bacillus and the plasmodium were admitted to be diagnostic, here we have, according to this reputable microscopist, both in the same patient. This looked like a clear demonstration, and when we couple such items with clinical facts, it looks as though there is such a thing as typho-malarial fever.

Thanks to Retiring Board of Medical Examiners.

Dr. Way offered a resolution relating to the Board of Examiners, which was adopted after a slight amendment by Dr. Summerell.

[Dr. Way's original resolution was not received by the Committee on Publication. The purport of the resolution is that the thanks of the Society are due to Drs. Wm. R. Wood, W. J. H. Bellamy, J. A. Reagan, Willis Alston, P. L. Murphy, A. W. Knox and Francis Duffy, composing the Board of Medical Examiners of North Carolina, for the successful manner in which they have conducted the very arduous duties of Examiners for the past six years, assuring these gentlemen of the entire approbation of their confréres.]

The President suggested that the profession of Asheville select their committee of arrangements for the next meeting at as early a date as possible and send same to the Secretary.

A Call for Relics of Confederate Medical Department.

Dr. Satchwell, for the Committtee on the Collection of Statistics Relating to Confederate Veterans, asked to have sent to one of the committee any papers or information any member was possessed of.

It was voted that successful applicants before the Board of Examiners could join the Society after adjournment by reporting to the local members of the Committee on Credentials and signing the books in the possession of the Secretary.

A Case of Traumatic Stricture of Œsophagus.

Dr. Booth presented a patient suffering from a traumatic stricture of the œsophagus at the cardiac orifice, the result of swallowing concentrated lye. He wanted to impress especially upon the younger members two things: 1st. No matter how severe the case may be, do not despair of relieving it by dilatation. 2d. And no matter how high an authority says it cannot be relieved.

The patient came to him about four years ago with a complete stricture. He had no bougie suitable, so he tied two urethral bougies together, but could not push out the substance that closed the little opening. He digested it with pepsin and muriatic acid. Procured some œsophageal bougies, but thinking them too stiff and liable to injure the tube, returned to the little ones. Patient was advised to go to an eminent surgeon, who advised gastrotomy. This the patient objected to till he had consulted his home physicians, and when he came back Dr. Booth advised him to put off the operation till all other means had been tried and failed. He tried olive-pointed bougies, but could not introduce even the smallest. Had a set made of whalebone from 1-32 of an inch up, increasing by 1-32 inches.

The patient was sent to one of the most eminent surgeons in the United States, who told him there was no stricture except just below the glottis, and that the trouble lower down was reflex. The patient has a long neck, and the surgeon passing his probe to the cardiac stricture thought it had entered the stomach, though the patient insisted that he had not. The stricture has been dilated now to ¼ inch, and he thinks he will cure it entirely.

Dr. Cheatham had a case of stricture of the œsophagus in which the patient was kept alive for six months by rectal alimentation.

Dr. Roberts mentioned the case of a girl who drank concentrated lye. He was called in afterwards to treat her for a gastritis which seemed to threaten life. For ten days she took nothing on the stomach, and the gastritis was cured. About a month after stricture of the œsophagus developed, and he was glad to say he commenced treating it early enough to prevent a complete stricture. He used metal œsophageal tubes, beginning with one about ¼ inch in diameter and gradually increasing to ½ inch.

Dr. Booth found that when, in introducing the bougie, the stric-

ture was reached, a sip of water will set up peristaltic action of the œsophagus and assist the introduction.

The President asked for unfinished business.

What Relations have the County Medical Societies with the State Medical Societies?

Dr. Booth asked what relation the County Societies have to the State Society. He hoped they work under the auspices of the State Society.

Dr. Hays referred him to the Section of the Regulations of the Society bearing on that subject.

Dr. Baker called attention to the fact that the COMMITTEE ON SCIENTIFIC INVESTIGATION had made no report for two or three meetings.

The President read the resolution by which the last six Presidents of the Society were to constitute this committee, and requested the Society to make a note that the matter had been referred to, and that the present committee are expected to be heard from next year.

The report of the Committee on the Pittman Prize asked for further time, and that they be permitted to render their decision after adjournment. Request granted.

Resolution of Thanks.

The following resolution was adopted :

Resolved, That we, the members of the Medical Society of North Carolina tender our sincere and most hearty thanks to the good and hospitable people of this lovely city of Oxford for their unlimited and most courteous hospitality extended to us during this meeeting, and to all others who have in any way added to the comfort and pleasure of the members of this Society.

New Members.

The following is a list of the new members admitted :

Dr. J. P. Munroe,
" John W. Booth,
" T. L. Booth,
" John Sweaney,
" J. S. Lafferty,

Dr. W. G. Stafford,
" B. W. Hathaway,
" J. H. Marsh,
" L. A. Hanks,
" P. B. Loftin,
" A. L. Gibbon,
" W. A. Graham,
" R. B. Henderson.
" J. L. Ray,
" C. E. Hilliard,
" S. H. Kenedy,
" J. C. Kirkman,
" W. B. Crawford,
" J. L. Edgerton,
" I. G. Riddick,
" W. H. Cobb, Jr.,
" J. W. White,
" J. P. Fearington,
" E. G. Moore,
" J. J. Menn,
" E. R. Michaux,
" M. R. Braswell,
" B. Chears,
" I. M. Lynn,
" J. N. Peace,
" James R. Rogers,
" E. P. Snipes,
" E. C. Laird,
" R. A. Morton
" R. D. Jewett.

On motion, the Society adjourned to meet in Asheville on the last Tuesday in May, 1891.

[The following gentlemen compose the Committee of Arrangements appointed by the Buncombe County Medical Society to make the necessary preparations for the meeting of the Medical Society of North Carolina in Asheville on the last Tuesday in May, 1891. M. H. Fletcher, M.D., Chairman; J. S. Grant, Ph.G., Secretary; S. W. Battle, M.D., W. P. Whittington, M.D., H. Longstreet Taylor, M.D., Major William E. Breese, President First National Bank, Charles D. Blanton, Mayor of the City.]

MINUTES OF THE BOARD OF MEDICAL EXAMINERS OF 1890.

OXFORD, N. C., 24th May, 1890.

The Board of Medical Examiners of North Carolina met in annual session at the Hotel Irwin at 9 o'clock a. m., May 24th, 1890.

Present, Dr. A. W. Knox, Examiner on Obstetrics; Dr. F. Duffy, Examiner on Surgery, etc.; Dr. Willis Alston, Examiner on Practice of Medicine, etc.; Dr. P. L. Murphy, Examiner on Anatomy; Dr. W. J. H. Bellamy, Examiner on Materia Medica, etc.

Absent, Dr. Wm. R. Wood, President, and Examiner on Chemistry; Dr. J. A. Reagan, Examiner on Physiology, etc. (The last two Examiners appeared on Monday morning.)

In the absence of the President Dr. Knox was called to the Chair and the minutes of the last meeting were read, and, after some additional matter was added, they were approved.

It was moved by Dr. Alston that that portion of the minutes of 1889 in reference to the indiscriminate dispensing of intoxicating liquors and beverages upon prescriptions of physicians shall be published in one religious newspaper of each denomination in North Carolina, and also in the *Churchman*, published in New York. Carried.

It was moved and carried that Drs. Duffy and Knox be appointed a committee to write and consult the Attorney General in regard to those physicians who failed to register on or before the 1st day of January, 1890, having been qualified to do so, and also concerning those who registered from having been in practice prior to March 7th, 1885, but have never received a license from the Board, and are now known to be guilty of grossly immoral conduct; and to ask the question: Can this Board annul the registration certificate and take away the privilege of such men from practising in this State?

The letter was as follows:

OXFORD, N. C., May 24, 1890.

Hon. T. F. Davidson, Attorney General, Raleigh, N. C.:

Dear Sir:—There are a number of physicians in North Carolina who, according to the terms of the recent amendments to the laws regulating the practice of medicine in this State, were entitled to

register before January 1st, 1890, as legally qualified practitioners of medicine, but who, from various causes, failed to exercise this privilege during the time prescribed by law, and have therefore, under the operations of the law, become debarred from practising medicine. Some of these persons are *licentiates* of the Board of Medical Examiners; others are *not*. The Board of Examiners find themselves in an awkward position, owing to this unexpected hardship, which has befallen many, and desire, if they can *lawfully* do so, to exercise their discretion in licensing such persons *without examination*, so as to restore them to their rights, as contemplated under the law. It is obvious that many of these men would not be able to stand the examinations, as they are now conducted; and the examiners are unwilling to hold merely formal and farcical examinations, and then confer on these new "licenses or diplomas" setting forth high qualifications and couched in the same language as the license obtained by those who have successfully stood the severe tests.

We desire from you an expression of opinion as to the *extent* of the power of the Board of Examiners in these matters, and as to the legality of favoring such form of license and conferring the same on the persons in question *without examination*, so as to restore them to their former rights, which have been forfeited through inadvertence or unavoidable circumstances.

There are good reasons why the time limiting the privilege of registration *should not be* extended by the Legislature; for instance, one, making oath that he had been in the practice of medicine before a certain time, was allowed to register. This was sometimes construed to admit druggists and charlatans not contemplated as practitioners under the law.

We desire to ask your opinion on another point, viz: The Board of Examiners are empowered, under the law, to *rescind* licenses of *licentiates* guilty of "grossly immoral conduct." Are the powers of the Board, in these respects *restricted to persons having licenses*, or are they the custodians or guardians of the morals of *all* the legally qualified practitioners of the State?

It would be obviously unjust and discriminating if *licentiates* of the Board could be debarred from practising medicine on account of grossly immoral conduct, while other practitioners, *not licentiates of the Board, could not* be so debarred for the same cause. For

your convenience we enclose a copy of the codified laws on these subjects, including recent amendments.

Please let us hear from you as soon as possible during the present session of the Board, as these are questions requiring an early solution and likely to occur on Monday or Tuesday.

Direct your communication to Irwin Place Hotel.

Very respectfully,

FRANCIS DUFFY,
A. W. KNOX,
Committee.

The following is the reply of the Attorney General:

STATE OF NORTH CAROLINA, DEPARTMENT OF JUSTICE,
OFFICE OF THE ATTORNEY GENERAL,
ALEXANDER, N. C., May 28th, 1890.

Messrs. Francis Duffy and A. W. Knox, Com'ittee, Oxford, N. C.:

Gentlemen:—Your letter of the 24th just reached me last night. Apprehending that you might have occasion to act upon the matter before a letter could reach you, I this morning telegraphed my opinion upon the first point submitted. The conclusion I reached is that the purpose of the creation of the Board being to provide a test for the qualifications of those who may desire to engage in the practice of medicine in this State, where a person has submitted once to that test and has been found possessed of the necessary qualifications, it was not essential that another examination should be had before he was entitled to register under the recent act. The first examination will be presumed to have furnished all the information to the Board necessary to the exercise of its powers to license. I do not mean to say the Board is bound in every instance to grant the license without an additional examination, for there may be cases in which it would be proper to re-examine the applicant, but I think a sensible and practical construction of the law will confer upon the Board sound discretion in the matter. For reasons satisfactory to itself the General Assembly exempted those persons designated in the last *proviso* of Section 3,132 of the Code, as it now stands, from an examination by the Board, and I think they are upon the same footing as those who have been licensed after examination. The Board might, however, feel it right to exercise the discretion, which I have said they have, in respect to

those who have been examined and licensed, with greater caution. The reasons for this are obvious, doubtless, to the profession.

I am inclined to the opinion that the power to revoke license under Section 3,133 of the Code is confined to those cases where the Board has granted the license. Since the Registration Act, it might be, the Board, under the conditions imposed in the Statutes, could reverse or vacate the license issuing upon a proper registration, but this is conjecture, and I venture to suggest that it will be more prudent not to attempt the exercise of a doubtful power in so delicate and grave a matter.

The General Assembly will be in session before the next regular meeting of the Board, and no doubt will amend the law in all proper respects.

Hoping the delay in responding to your letter has given the Board no inconvenience, I am, very respectfully,

THEO. F. DAVIDSON,
Attorney General.

During the interim between the annual meetings of the Board in 1889 and 1890 temporary licenses were issued to the following :

Dr. L. L. Vann,
" Alexander Mack,
" C. L. Summers,
" W. E. Warren,
" John J. Peacock,
" Reuben H. Bryant (col.),
" Charles C. Christian,
" Robert D. Jewett,
" J. H. Peel,
" R. E. Hinman,
" A. D. Horah,
" A. V. Jova,
" E. C. Laird,
" A. E. Reid,
" D. P. Whitly,
" J. F. Sanderford,
" L. B. McBrayer,
" H. L. Baird,
" G. M. Hackler,
" J. N. Gill.

It was ordered by the Board that the *Rules* governing written examinations be read to each class before commencing the examination, and that, if an applicant should leave the hall for an unusually long time (his name and the time of leaving the hall being recorded by the Examiner on duty), when he returns he shall be given a question different from the one upon the blackboard at the time of his leaving the hall.

There were 72 applicants for license. The following were successful, viz :

Dr. John T. Strickland, Castalia, N. C.
" Robert D. Ross, Charlotte, "
" Rhodes E. Nichols, Dayton, "
" Robert S. Primrose, Newbern, "
" George T. Mewborn, Snow Hill, "
" William McAllister, Milledgeville, "
" James C. Williamson, Whiteville, "
" Alston D. Horah, Salisbury, "
" John Spicer, Goldsboro, "
" John J. Peacock, Saratoga, "
" Arthur O. Jones, Rogers' Store, "
" L. L. Sawyer, Elizabeth City, "
" Richard E. Hinman, Charlotte, "
" Leon E. Norfleet, Tarboro, "
" Rufus J. Teague, Alpha, "
" Charles C. Hubbard, Wilkesboro, "
" Alexander Mack, Red Springs, "
" Luther L. Vann, Winston, "
" Robert J. Nelson, Bethel, "
" William R. Mayo, " "
" Wm. S. Windsor, Cross R'ds Church, Yadkin County, "
" John B. Shamburger, Asbury, "
" Charles P. Ambler, Asheville, "
" G. W. Kughler, Jr., Washington, "
" Robert D. Jewett, Wilmington, "
" John F. Sanderford, Creedmore, "
" Daniel P. Whitly, Big Lick, "
" Robert M. Reid, Steel Creek, "
" N. M. Blaylock, Banks, Wake Co., "

Dr. C. H. Sexton, Raleigh,	N. C.
" J. Watts, Taylorsville,	"
" Kenneth A. Blue, Hasty,	"
" Daniel W. Courts, Reidsville,	"
" James R. Jerome, Mint Hill,	"
" William E. Headen, Pittsboro,	"
" Edward H. Bowling, Luster,	"
" Charles B. Hargrove, Tarboro,	"
" Duncan J. Watson, Southport,	"
" S. S. Flynt, Rural Hall,	"
" Jesse C. Bradsher, Olive Hill,	"
" John A. Gaddy, Cedar Hill,	"
" D. E. Caldwell, Chapel Hill,	"
" James T. Bynum, Germanton,	"
" Marcus W. Alston, Louisburg,	"
" Paul N. Melchor, Concord,	"
" C. L. Jenkins, Tarboro,	"

The following resolution was offered by Dr. Knox, and unanimously adopted :

WHEREAS, In the April number of the NORTH CAROLINA MEDICAL JOURNAL, the suggestion is made by a correspondent that two or three members of the present Board of Examiners be reëlected at this meeting of the Society; and

WHEREAS, It has come to the ears of the Board that a rumor is current which credits some members of that body with the desire for reëlection, it is herewith *unanimously*

Resolved, That, while we are grateful to the JOURNAL'S correspondent for the words of commendation uttered by him, yet we do not think it advisable, under all the circumstances, that *any* member of the present Board be reëlected.

Resolved, That we repudiate the floating statement referred to above, as doing us a great injustice; and we declare our *unanimous* conviction that the *honors, responsibilities and labors* which attend and follow election to the Board of Medical Examiners should not be given to its members for a longer period than one term.

Resolved, That a copy of these resolutions be sent to the President of the North Carolina Medical Society with the request that he read them to that body, and that we affix hereto our several names.

WM. R. WOOD, M.D., President,
A. W. KNOX, M.D.,
WILLIS ALSTON, M.D.,
P. L. MURPHY, M.D.,
FRANCIS DUFFY, M.D.,
JAS. A. REAGAN, M.D.,
W. J. H. BELLAMY, M.D., Secretary.

An oral examination on account of sickness in the individuals themselves or in their families, was allowed Dr. Robert L. Walker, Dr. J. T. Rieves, Dr. M. E. Gattis, Mrs. M. T. Fitch, Dr. John H. Peele, and, in consequence of a Colles fracture of right radius, was allowed Dr. Leon. E. Norfleet.

The written examinations were as follows: Anatomy, Monday, a. m.; Surgery, Monday, p. m.; Practice of Medicine, Tuesday, a. m.; Materia Medica, Tuesday, p. m.; Obstetrics, Wednesday, a. m.; Physiology, Wednesday, p. m.; Chemistry, Thursday, a. m. At the close of each examination it was announced on the blackboard which branch would be taken up next (in order, as above).

An election for a new Board having been held, the gentlemen elected held a conference with this Board. Dr. Charles J. O'Hagan, who happened to be present, was asked to preside, and Dr. W. J. H. Bellamy was requested to act as Secretary.

After an interchange of views, in a most felicitous manner, the following resolution, by Dr. Murphy, that those physicians who failed to register and were qualified to do so, either by former examination or by legal statute, the Board may, in their discretion, issue them license without fee. Carried unanimously.

It was moved that a committee, consisting of Drs. Murphy, Knox, Duffy, R. L. Payne, Jr., and Geo. G. Thomas, draw up a form of certificate to issue to that class of physicians alluded to.

The following was the form reported, which was unanimously adopted:

Whereas, ———————————— having failed to register before the first day of January, 1890, as provided by law, hath applied to the Board of Medical Examiners of North Carolina for license to practice medicine, therefore we, by virtue of discretionary authority vested in us by law, do hereby issue to him license to practice medicine in the State of North Carolina.

[Seal.] { Signed by the members of the Board in office. }

The following, offered by Dr. Geo. G. Thomas, was adopted:

Resolved, That the license contemplated in the form just adopted shall be understood to be issued to the applicant upon the certificate of the Clerk of the Superior Court of his county that he was a physician practising medicine as a means of livelihood prior to March 7th, 1885, and when the Board of Examiners shall be satisfied that he is of good moral character.

The Conference ending, the Board resumed their work. Their arduous duties, night and day, were faithfully performed, and the Board adjourned Saturday, at midnight, *sine die*.

W. J. H. Bellamy, M.D.,
Secretary.

SOME VALUABLE STATEMENTS.

Below will be found some interesting statements which have been tabulated for easy reference, showing some of the work of the Board from 1885 to 1890—both years included :

NAMES OF COLLEGES.	Graduates Licensed.	Graduates Rejected.	Non-Graduates Licensed.	Non-Graduates Rejected.
University New York	25	.....	1	2
" Pennsylvania	3	.....	2	.....
" Maryland	71	11	3	6
" Virginia	12	.....	4	2
" of Vanderbilt	4	8	.....	1
" South Carolina	.....	.....	.....	1
" Louisiana	2	.....	.....	.....
" Louisville	3	3	.....	.....
" Michigan	1	.....	.....	.....
" Georgia	1	1	.....	.....
Bellevue Medical College	17	3	1	3
Atlanta Medical College	3	4	1	.....
Medical College Virginia	3	.....	2	1
Charleston Medical College	.....	1	.....	.....
Louisville Medical College	14	8	1	4
Baltimore Medical College	3	4	1	.....
College of Physicians & Surgeons, Baltimore	64	21	7	14
College of Physicians and Surgeons, N. Y.	3	.....	.....	1
Kentucky School of Medicine	5	2	.....	.....
Leonard School of Medicine	11	2	.....	3
Jefferson Medical College	35	2	5	3
Southern Medical College, Atlanta	2	2	.....	.....
Medical College of South Carolina	5	.....	1	1
Long Island Medical College	3	.....	.....	.....
Woman's Medical College, Philadelphia	1	.....	.....	.....
Nashvile Medical College	.....	.....	1	.....
Baltimore University School of Medicine	1	1	.....	.....
Medico Chirurgical College, Philadelphia	1	2	.....	.....
No College at all	.....	.....	1	4
Western Reserve University, Cleveland, O.	1	.....	.....	.....
Tulane University, Louisiana	1	.....	.....	.....
Eclectic Medical College, Atlanta	.....	1	.....	.....
Howard University, Washington	.....	1	.....	.....
N. Y. Homæopathic H. Medical College	1	.....	.....	.....

1885	84	Licensed.	17	Refused.
1886	46	"	15	"
1887	34	"	14	"
1888	36	"	17	"
1889	46	"	17	"
1890	46	"	26	"
Totals	292	Licensed.	106	Rejected.

[APPENDIX.]

PRESIDENT'S ADDRESS.

By Geo. Gillett Thomas, M.D., Wilmington, N. C.

(Delivered before the Medical Society of North Carolina, at Oxford, May 27th, 1890.

Gentlemen of the Medical Society of the State of North Carolina:

To be chosen out of such a body as this, composed of the representative men of the medical profession in North Carolina, to preside over its annual deliberations, and, as far as need be, to guide its work to a successful issue, is an honor carrying with it a deep responsibility, and one not to be lightly accepted, or esteemed as of less than great worth. Imbued with these feelings I am sensible of the grateful returns I owe you for your distinguished consideration, I have accepted this office at your hands, and having performed its duties as they appeared before me during our separation, I offer you in return such a record of the year's work and its suggestions as I am able as a modicum of my thanks for your very pleasing partiality.

At no time since the organization of this Society, in 1849, has there come to it a period of greater responsibility than is just forced upon it. It probably would more properly fit the exact condition of affairs to say that we have assumed the responsibility. For out of this body have gone the laws which have become statutes by the sanction of the law-makers.

The present status of the laws regulating the practice of medicine ought to be a source of congratulation to every right-thinking man of our profession in this State, whether he be enrolled upon our lists, or is not of our fold, but esteems himself an honest man and true to the tenets of his calling. For we stand now armed with the power to bar the entrance to practice to all who had not availed themselves of the opportunity to register before the 1st of January, 1890. The only passport that will avail now is a license from the Board of Examiners—a passport which is worthy of recognition anywhere.

Let us see what the laws have been and what they are now, and what duty they impose upon us in our relations to the profession at

large and to the people whose welfare is committed to our keeping. It is known generally that in 1859 a law was secured which gave this Society the power to create a Board of Medical Examiners, who should carefully scrutinize the preparations every candidate who asked for license had made for his professional work. The Legislature which enacted this law was so careful of any infringement upon the rights and feelings of the people, that it was especially provided that no failure to procure a license prior to beginning practice should be deemed a misdemeanor, and set the punishment for such failure by providing that no unlicensed practitioner should be entitled to collect his fees by legal process. Of course, if the law-makers were so gentle in their punishment as this, it was understood that there should be no retroactive application, and therefore that all physicians in practice at the date of the passage of the act were *ipso facto* exempt from its pains and penalties.

Being pioneers in this great reform movement and conservative and wise men, those gentlemen of this Society to whose care the presentation of this law to the Legislature had been confided, felt that it was prudent to accept the law as it was offered them as the best that could be done in the beginning. Fully convinced of the justice of the cause they had espoused, they were willing to wait for time to prove their work, confident that wise counsel would in due time make these laws what they should be. For they were not intended to do more than fence out of the profession the pretenders and those so-called physicians whose educational acquirements were not of such a character as to entitle them to have charge of the lives and health of communities and neighborhoods.

This, as you all should know, was the first time in the history of medicine in the United States that a great Commonwealth had, through its Legislature, assumed control of the practice of medicine and appointed, or rather accepted, officers appointed under its statutes whose duty it is to make the standard of education for men offering for practice within its borders.

I have said this was a pioneer movement. It was more. It was a great revolution looking to increasing reform in medical education. So small was the number of gentlemen composing this Society in comparison with the practitioners without the fold, that it looked as if they had undertaken a task beyond their powers, and the failure to compass the intention of the law, even if the failure was a partial

one, would make the law of no avail. The facts, too, that many of those physicians who were exempted by the non-retroactive nature of the law were in too many instances disposed to scoff at the effort to raise the standard of medical education, and that it was comparatively a rare event for a doctor to seek from the courts the power to collect his bills from obstinate and ungrateful debtors, both conspired to weaken the influence of the law, and to render it too often a very weak, if not dead, letter on the statute books. But the same men whose integrity and manhood had impressed the Legislature and secured this first step in this work continued to meet in the sessions of this Society every year, and they comprised a large portion of the best material of citizenship as well as of professional worth in North Carolina. It soon, therefore, became apparent to those men who wished to be aligned with the highest respectability of their profession that they must seek admission to our membership and participate in our aims and intentions. There was no barrier to this laudable ambition save the Board of Medical Examiners, and the committee who supervised the credentials of applicants. If these latter could satisfy the Examiners, these guardians of the public safety, of their possession of the necessary education for the work they had chosen, the Committee on Credentials had only to know that no social or moral obstacle presented to bar them from full fellowship in this body and to the enjoyment of its benefits. They soon became fully alive to the importance of sustaining the measures instituted to protect the profession and were with the rest active in urging the work already so well begun.

But the laws were defective in that no punishment, properly so called, was provided for a neglect to procure a license. Time after time the question of asking for proper amendment to the laws was mooted, and only postponed that the benefits of the statutes, in their unfinished form, might so recommend it to the people, and therefore to the Legislature, that an appeal to the latter body would be met with a willing response.

It was still the proud boast of North Carolina that she was in the lead in this matter of medical reform when the law was amended making it a misdemeanor for any one to begin the practice of medicine in the State after the passage of the amended act of 1885 without a license from the Board of Examiners. This law is no wise affected by the existing laws that unlicensed men already in

practice, and beginning after 1859, should not collect their bills by law. But to this law of 1885 was added an unjust and arbitrary distinction, granting an amnesty to all physicians in practice between 1859 and 1880, who had no license and putting them upon an equality with the class exempted by the non-retroactive policy of the statute, as well as with the class of men who had sought and procured the license of the Board. I say this was unjust, because they were no more entitled by any known merit to this special exemption than were those men who belonged to the class coming in between 1880 and 1885, the latter being the year the law with actual punishment attached to it was passed. For these men, who came into the profession in the five years between 1880 and 1885 were no greater violators of the law than their more favored brethren whose professional life was of date between 1859 and 1880. It was arbitrary because there was no change in either the men or their education after 1880 and before 1885, and the formation of this class made the existing laws burdensome and obscure, and would in a short time have justly rendered them so unpopular as to lead to a repeal of all laws affording protection against the admission to practice of men with imperfect equipment.

It is not pretended that this law was immediately productive of the good that was the promise that made to secure its passage. There was a striking and almost fatal defect in that the prosecution of offenders necessitated the making of an affidavit by one or more physicians to the grand jury or to them through the solicitor that this or the other person styling himself a physician was not entitled to such assumption by law. In other words, the disagreeable task of appearing against one's neighbors in medicine, if I may so call them, as prosecutor, was thrown upon those of the profession who had legally entered the ranks. It goes without saying that this would have been followed by the allegations of envy or personal dislike, to be set up by the prosecutor in person and his friends, and, instead of his appearing, as he was, a criminal in fact and in the eyes of the law, he would have been to his followers and admirers the object of organized persecution. It was not intended that regularly licensed physicians should assume the role of prosecuting witnesses, but the solicitors demanded no such affidavits as above set forth before they would send in indictments to a grand jury. I am aware that I am rehearsing what is well-known to many, if

not all, of you, but I ask your forbearance a little longer. This state of affairs begot grave concern among such of the members of the Society as were watching now only the course of events, and seeing the deficiencies that existed, and the need of some immediate change, a committee was appointed at Fayetteville in 1888 to frame such amendments to the laws as would secure its ends, and to seek from the Legislature such aid as it would give in the way of amendments. In order to compass the objects of our medical laws it was necessary to know who was practicing medicine in North Carolina and by what color of title they entered and prosecuted their work. When the committee set themselves to the task assigned them they found that all over the State men were practicing, with no right except an assumed one. It has been conceded by the courts of the State that if a person offers to prescribe for the cure of disease, to do such acts as are commonly known as the practice of medicine, he is entitled to style himself a physician. This is a wide margin, and upon it have entered men without diplomas, without license, and, what is worse than all, without such knowledge of medicine or its branches as will enable them to care for the lives and health of such people as blindly put themselves in their hands for protection against disease. To find out who were practicing the committee adopted a method of registration which is known to all of you, and a year ago they turned over to you the result of their labors. They believe that the new law, if carefully watched, will be a complete protection in the future, and they are likewise convinced that such deficiencies as exist are slight in comparison to the benefits, and that, under all the circumstances, they were unavoidable. Let us see again what has been done and the reasons.

When the laws were looked over for amendments it was clear that, under the existing statutes, there were four classes of physicians in the State :

1st. All physicians in practice before 1880, and these were entitled to collect their bills by law and exempted from any penalty for practicing without license.

2d. All physicians beginning practice between 1880 and 1885, without license, who were not entitled, therefore, to collect bills by law, but were not indictable for practicing without license.

3d. All physicians who had obtained license and who were,

therefore, entitled to the full protection of the law and its benefits.

4th. All physicians who began the practice of medicine after March 7th, 1885, *without license*, and who were indictable, therefore, for misdemeanor under the law.

To readjust the condition so as to make it possible for the laws regulating the practice of medicine in the State to be of practical avail, the committee began its work by changing the existing laws so that that classed 2d, with its special exemption, should be put on an equality with all the rest, in the following manner: A registration was ordered in all the counties in the State, and this registration under the law made every person securing the clerk's certificate a legal practitioner. The terms of registration were simple and plain. The applicant must have and exhibit to the clerk either a license of the Board of Examiners, or a diploma bearing date prior to March 7th, 1885. And it was further provided that all persons desiring registration must present themselves to the clerks of the Superior Court of the counties where they respectively reside before the 1st day of January, 1890. The penalties for practicing without registration are plainly set forth and in due time the names of every person practicing medicine in North Carolina without the clerk's certificate will be reported to the solicitor of his district for indictment. Six months were given every physician whose address could be obtained to comply with the law, and copies of the law were sent out to these addresses.

The doors of registration are closed, except to licentiates of the Board of Examiners, and before we enter into a study of the results of this new work let us congratulate ourselves that just at the time when this new law was being framed the Supreme Court of the United States gave the opinion that such statutes as those we are working under, regulating the practice of medicine, were entirely legal and within the power of all the States to make. In defence of this opinion they said that such laws were a part of the protection which the State extended to its citizens to ward off the dangers that would menace from having improperly qualified physicians practicing in our midst. And the learned justice moreover declared that it was entirely within the power of the State to so change its laws as to force physicians within its borders to reappear before properly constituted Boards of Examiners and prove that they had

kept pace with the improvements in appliances and the advances all along the lines of medicine necessary to the full understanding of the duties of so responsible a profession as ours. This may sound like strange doctrine to some of you, and the cry may be raised that such action would constitute *ex post facto* legislation. I reply that it emanated from the Supreme Court of the United States, and is *pro tanto*, beyond question, a good law. And now, what is this new law which to-day governs the practice of our profession in the State? It is a provision on the statute book which makes known the names of nearly, if not all, of the physicians in our borders, because it requires that every practicing physician shall have registered before January 1st, 1890, and if any failed to do so, and still offered for the patronage of the communities in which they lived, that they are liable to indictment, and if convicted will be subject to fine or imprisonment or both. Moreover, the law provides that a penalty shall be visited upon the clerk if he shall issue a certificate of registration except as provided by law.

We have seen that it has put on record the physicians in the State. First, because through the clerk's of the counties and through letters from postmasters and physicians your efficient Secretary has obtained a list by which the law was sent out, and then these registrations have been returned to me from the clerks. This at once put into the hands of the solicitors ample information for the prosecution of the law, and obviates the necessity of physicians in neighborhoods or communities being called upon to appear as prosecuting witnesses. For if a practitioner is indicted and admits or it is proven that he is engaged in practice, and the clerk's list does not contain his name properly entered, it is clear that a verdict must follow, the uncertainty of jury trials being the only drawback in the way of the law. A soon as practicable after the advent of the new year I undertook to get in the list of registrants from each county from the clerks.

I have had these lists carefully copied, and in each county have also had placed the names of those who were not on the clerk's returns, but who have been sent on to the Secretary as physicians and who were supplied with a copy of the law. The latter are liable for indictment. There are in North Carolina, as well as it can be ascertained, 1,949 engaged in the practice of medicine. Of this number 1,350 have registered and are legally qualified to practice, 599 have not registered, and 24 have registered since the 1st of

January, and it now remains to provide for the application of the law to them.* But of this I will ask you to allow me to speak a little further on.

So much for the registration as it stands.

I am aware that the law which we now have under discussion has been the object of much criticism because of its admission of so many men to the title of legal practitioners that we are loth to recognize as such. I have said that the law of the State allowed any person who shall assume to cure diseases as a means of livelihood to call himself a physician—without regard to race, sex or previous condition. And this being a fixed fact, it is easy to see that it was impossible for any law to be framed that would deprive these people of their rights or of their means of securing a living. A conglomeration of elements met the committee on the threshold of their labors of amending the laws to raise the standard of our profession. In the same ranks in the eye of the law were the physicians who by diligent study and observation had fitted themselves for the task they had assumed; those who, securing a diploma in the easiest way possible to them, had been content to stop there, unwilling to undergo the labor which advance and progress necessitate; those whose only claim to recognition were the well-known ways of the charlatan and pretender. In short, all sorts were in the ranks, and the only method that seemed possible for the separation of the good from the bad and the abolition of the latter was to be the outcome of expensive, tedious, and, most of all, very doubtful, processes of law. To accomplish this the Society would, of necessity, have been forced to take the part of prosecutor, and by contributions from its funds, and if they failed, by drafts upon its members have supported these legal processes.

Again, it was a difficulty not likely to be thought of to reach all, or even many, of these offenders against the medical laws; and as this difficulty seems insurmountable it was best to open the doors to all comers once and for a term of six months, and then to deny admission to any one except licentiates of the Board of Examiners. This is, I hold, good policy. It accepted a necessity and by virtue of its existence made friends for the law of the men whom other-

*These figures are subject to correction and changes will be made in them as rapidly as the information can be had from the counties.

wise must be prosecuted and who would in time be the bitter enemies of all regulations relative to practice of medicine. To weed out only these nuworthy ones and leave only the good, was an unattainable state of purity. This law has admitted trifling and worthless characters to a legal footing, and for the reasons set forth. But they cannot live always to mar our profession and no more can enter. In one instance a druggist, and he in the employment of the State, basing his claim to being a physician upon the fact that he had prescribed for diseases and received therefor a fee, made oath that he was engaged in the practice of medicine prior to March 7th, 1885, and was duly registered, the clerk having no power to refuse the certificate to a person who was willing to make the prescribed oath. It remains to be tested whether this party and others had a right to make the oath they did, and in due time, no doubt, the legal status of all such parties will be definitely decided.

In clearing off a great forest for the advent of settlers it is not feasible to get out of sight all the obnoxious weeds or decaying trees at once, or to expect that order will immediately follow the opening work of the pioneers. Time will bring a full justification for all the provisions of the law or suggest such changes as will render it efficient.

This Society is the originator of this law, and it is clearly the duty of this body to aid in every way in its power in securing the prosecution of its provisions. To this end I would suggest that the Board of Examiners shall hereafter have as one of its duties the supervision of the registration in the counties and urge the indictment of offenders against the regulations. It is easily within the power of the Board for a small fee to secure an annual return of the names of registrants from the clerks, and as there are either members of the Society or registered physicians in every county in the State, one or more correspondents may be had among these from whom the names of all persons not legally licensed to practice medicine can be obtained. Of course it is understood that this Society has no right to order this work for the Board, but it is within its province to suggest it. If this method is adopted at stated intervals an officer of the Board should send to the solicitors in the different districts the names of the unregistered persons and call repeated attention of the proper officials to the laws regulating the practice of our profession.

I sent to each of the judges and solicitors a copy of the law to insure their attention to these matters, accompanying each copy with a personal letter written as your presiding officer for the year. The disposition to see that the law should be properly placed in the charges to the grand jury was quite general, and I am convinced that the judges will properly instruct the grand juries in the matter, and that solicitors will not neglect this part of the important work.

This session will bring with it to this body the duty of selecting from its membership, as has been the custom, a new Board of Medical Examiners. It will be your pleasure to preserve the unbroken record of this honorable institution by electing from among yourselves only such men as are capable of filling the office and discharging its responsibilities. There has been a by-law in force in this Society since 1884 that seems to me unjust if its construction is literally insisted upon, and liable to work an injury to the welfare of this organization. It provides that no member shall be elected to the Board of Examiners (and its application has been pushed still further) who is not present at the meeting during which an election is held. If the purpose of the law is to exclude those men who persistently absent themselves from the meetings of the Society, and have as their only connection with its work the payment of annual dues, taking otherwise no part of the burdens of our Association, it is well that it should stand untouched. But, unfortunately, in its strict application, it may and has been made to strike at men who, by their labors and worth, have won the esteem of their fellow-members. Some stress of circumstances, arising out of professional or private engagements, may prevent them from being present at such meetings as this, and if the rule is adhered to, we may cut out men from the rewards which ought to follow this work.

The law has in it this disagreeable feature, that a member, no matter what his record as a faithful worker in our Society may be, must be present at an election time as if he was and must seek an office—the safe rule being that only worthy men shall hold office, and their works must appear and be known to estimate their worth and determine their election. I would suggest that a wise conservatism shall obtain in this matter, and that so much of this law as makes it obligatory upon a member to be present to entitle him to office, be changed so that it shall apply to those whose attendance

has been irregular and who have not borne their part year after year in our labors.

The experience of all the Boards of Examiners has been that, upon the inauguration of a new one, there are of necessity a number of difficulties attending the entrance of inexperienced men into the arduous details of the work of this Board. To obviate this difficulty I would suggest that there shall be two or three new members elected every two years, in the manner hereinafter set forth. This will insure continuous work.

There are seven members of the Board to be chosen. To inaugurate this new schedule I would suggest to you that the *three* members receiving the highest number of votes shall hold office for six years, that being the term of service by custom; the next *two* highest shall hold office for four years, and the *two* receiving the lowest number of votes necessary for an election shall hold office for two years. If *four* men or more should receive the same vote and be entitled by number of votes to be in the six year class, they may draw lots for the place, and then the rule may apply, as before, to the other classes.

At the end of two years, the term of the third class, or two year men, if I may so style it, for convenience, will expire, and their successors, when elected, will be chosen for six years, the same rule holding with the second class, or four year men, and the first class, or six year men, in each case the successors being elected for the full term of six years. It is apparent that this will necessitate an election every two years, giving to the Board new material and preserving upon its roll always a certain number of members who shall be experienced in the work.

In reviewing the labors of the Board whose term is closing with this session, it is not unbecoming that you should make careful note of the painstaking care with which they have upheld the standard of medical education. It is no idle boast that we may justly claim for the rigid examinations of our Boards that they have forced such medical colleges as wished the reputation attached to their diplomas to be unquestioned, to carefully prepare their students for their examination, lest they be sent back to them with the stigma of unworthiness set upon them. More than this, our reputation has gone abroad, and it has been the incentive and example for our neighbors, and in nearly all of the States the work upon a plan resembling ours

in all practical issues is being actively prosecuted. The duties of this last Board have been unusually arduous, and they have as their reward for the confinement and deprivation their office has brought them the esteem of this Society and the knowledge that they were performing one of the most important parts of the annual conventions. Let the example be studied and their course of action carefully followed.

It is well, in view of the present size and probable growth of this Society, that some definite understanding be had hereafter of the places of meeting proposed for succeeding years. Members proposing to have a convention held in their town should be prepared to offer a full description of routes by which their town can be reached, the hotel accommodations it can afford and the rates that can be guaranteed such members as may attend. The beautiful hospitality that once entertained the members in private houses, when there were a few only of us, can no longer be expected to open its doors to this large body, and the ever-increasing size makes some such provision as above indicated necessary.

There are on our roll of members a number of gentlemen who have grown to mature years in the service of this Society. They have been instant always in their duties and most determined in upholding the honor and good name of the body. We cannot consent to have them leave us or to lose the valuable counsel they always bring. Nor do we wish them to feel that they have in the least abated in their usefulness. But I would suggest to you that after twenty years of continuous service in the Society a member shall be placed on a roll to be called "The Honorary Fellows of the North Carolina State Medical Society;" that such members shall be exempted from the payment of all dues and fines, and be entitled to all the privileges and honors that appertained to membership previous to their election to this special list. Of course only such members will be eligible for this place as have kept up a prompt annual payment with the Treasurer. If this suggestion meets with your favor I would further advise that such a list be prepared during this session and submitted to the Society. Of course members of this class will be entitled to receive the printed copies of the proceedings of the annual sessions of the body. Let us honor these elders as they deserve, and in placing them apart from us have in

them a council of senators to whom we can appeal for advice and admire for its wisdom.

Amid the rejoicings and hearty greetings that mark our anniversary; along with the congratulations over the success that is attending the labors of this body to keep alive all things that pertain to the welfare of the profession, as well as over the honors and competencies that have followed as rewards of individual labor, there is forever present at our board a sorrow over the deaths of the honored and loved ones. The older ones have gone, and only their sweet memories are left as our guidepost to duty and success. These memories are, indeed, worthy of careful preservation, for they are redolent with all that makes up the honest man and the true physician. The younger ones have likewise now and again been called away, and we are to deplore their loss, snatched from our midst, when life was full of promise, and strength was happy companion of ambition. Loving hands will commemorate their virtues and good deeds, but it is fitting that we should remember them at this season, and in our sorrow know that we are better and more earnest men for their companionship.

Thou God of Love—beneath thy sheltering wings
We leave our holy dead,
To rest in hope. From the world's sufferings
Their souls have fled.

Oh! when our hearts are burdened with the weight
Of life and all its woes,
Let us remember them and calmly wait
To our life's close.

Let me thank you again for the kind partiality that has made me your presiding officer, and ask at your hands both your assistance and indulgence in the discharge of the duties of my office.

THE CURETTE AFTER LABOR AND ABORTION.

By J. W. Long, M.D., of Randleman.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.)

Mr. President and Gentlemen:

In asking your kind attention to the use of the curette after labor and abortion, I shall not attempt to treat the subject exhaustively, but the hope is earnestly entertained that the *indications* and *limitations* for the use of the curette may be set forth in such a light as to make these remarks at least suggestive of the proper course to pursue in the conditions we are about to discuss.

That intra-uterine therapeutics have not yet crystalized into cardinal doctrines may be readily seen by reference to the medical journals and transactions of societies. Again, it is wonderful how much resistance is encountered by any new procedure looking to an improvement on the old methods of managing labor and abortion. How often we have all seen patients and wise old grannies object to a simple vaginal wash, or even to changing a lying-in-woman's linens! Nor is this resistance confined to the laity, for doctors are too often heard to deny what they style "meddlesome midwifery." Now, I believe in conservatism, and think it the greatest safeguard to human life that we possess, but I fear in this particular department the opposition sometimes partakes of the spirit that characterized the opponents of Summelwiess.

The curette is one of the most highly prized instruments that I possess, for, besides the numerous indications for its use in the non-puerperal state, labor and abortion are of such everyday occurrence, and each case being liable to such grave complications of hemorrhage, infection and retention of the products of conception, there is a pressing necessity for some means by which we may "become master of the situation." In the curette we have a therapeutic resource that is not only efficient when properly and judiciously used, both as to time and subject, but is convenient, easily applied and safe.

There are just three indications for its use in the days immedi-

ately following delivery at term or prematurely. These are *infection*, *hemorrhage* and *retained membranes.*

There are other indications that might arise later, as chronic metritis, fungus growths, hemorrhage, etc., but it is not the object of this paper to discuss these.

We will first consider *puerperal infection*, or child-bed fever. While the puerperal woman may be the subject of almost any disease—typhoid, malaria, pneumonia, or anything else—it is the well-founded belief of a majority of medical men of to-day that *the fever common to the lying-in period is, in all of its forms, an infection.* No one claims for a moment that the infecting agent is always the same, or that it affects every patient alike, but, as Dr. Grandin says: "The doctrine of to-day is that all essential deviations from the normal in the puerperal state are due to infection, in one way or another, of the puerperal tract."* As a rule, the infecting germ gains access to the endometrium, and here the septic process is inaugurated. Of course, the infection is *localized at first*, and this is the time the infecting agent should be attacked with irrigations and the curette, and thus destroyed before it is swept into the circulation and poisons the whole system. Without going into the details of the pathology of puerperal septicæmia, or dealing in scientific technicalities that would only tend to confusion, it is enough for the practical physician that he divide puerperal septicæmia into two forms:

1. That form which is etsentially *a decomposition—a putrefaction.*

In these cases a bit of retained placenta, or membrane, or blood-clot, or some tissue of low vitality, is attacked by the germs of putrefaction, and the morbid process, once set up, rapidly spreads to the contiguous intra-uterine tissues. It is probable that *no germs are carried into the circulation*, but the product of decomposition, which is supposed to be a chemical agent, is sucked into the veins and lymphatics and systemic intoxication (there is no other word that expresses it) is the result. These cases have no complicating cellulitis or peritonitis, but are simon-pure cases of *intoxication* from some poisonous agent. By way of illustrating this form of puerperal fever I cite:

*New York Medical Journal, February 16, 1890. Page 172.

SEPTICÆMIA AFTER LABOR AT TERM.

Case 1.—Two years ago last spring I was summoned hastily by wire to attend a consultation in a neighboring town. The two physicians in attendance kindly met me at the depot and stated frankly that they did not know what the trouble was. As we walked to the house they gave the following history :

The patient, Mrs. G———, a young primipara, was delivered by one of the gentlemen two weeks before and had no trouble during labor nor until a week afterwards, when he was summoned and found her pulse 130, some fever and very great prostration. She had grown gradually worse during the following week. I found her in *articulo mortis*, pulse 156, shallow respirations, comatose. It was impossible to discover any lesion outside of the genital tract. There was no peritonitis, not even any tympany; in fact, the anterior abdominal wall had sunken in till it rested upon the spinal column and the hypogastric region resembled a basin. Bi-manual examination revealed the uterus anteverted to the most extreme degree I ever saw, so much so, in fact, that the fundus was lower than the cervix; of course there could have been no proper drainage. I told the husband and physicians that the patient was bound to die—was dying then, but I would like to prove my diagnosis of puerperal septicæmia (or, more properly, sapræmia) by washing out the uterus. They readily consented, and, by means of a metal male catheter and syringe, we washed away a quantity of highly offensive putrid detritus that no doubt was the cause of the woman's death.

2. The second form of puerperal septicæmia is caused by a germ, probably the round bacteria, which on reaching the interior of the uterus rapidly multiplies and *is carried into the lymph circulation*, where it continues to increase and forms in whatever tissues it may be conveyed depots of pus and secondary foci of infection. These are the cases where we have cellulitis, peritonitis, lymphangitis, etc.

From this it may be readily seen how local treatment by irrigation or curette would be effective in the first form, where we have to deal with simply a local putrefaction and its resulting chemical product; and in the early stage of the second form before the germs enter the circulation. In this second form, after the microbes have

passed into the lymph channels, neither irrigations nor the curette can be of much avail, and may do positive harm. But in the first, or that form resulting from the absorption of the chemical products of decomposition, it is a singular fact that, no matter how extreme the degree of putrid intoxication anywhere short of the very article of death, removal of the putrefying mass and thorough cleansing of the uterine cavity, will cause the patient to react as rapidly in many instances as a red-hot iron cools on being removed from the fire! This is a strong assertion, but cases in my own practice bear me out, and I doubt not many gentlemen present have seen just such cases, while medical literature contains numerous illustrations of this fact.

While the object of this paper is to advocate the use of the *curette* in puerperal septicæmia and other conditions to be mentioned presently, I wish to be careful not to prove too much, for quite often this very class of cases that we are now discussing yield most brilliant results without resorting to the curette.

SEPTICÆMIA AFTER LABOR AT TERM.

Case 2.—Is a striking instance of the immediate good effects of local treatment without using the curette. In November, 1886, I attended Mrs. P———* through a normal delivery. She did so well that her case was dismissed after the second or third visit. On the *twelfth* day after labor I was again called to see her, and found her nearly dead—tongue pointed, red and parched; skin dry, harsh and icteroid; constipation; urine scanty and highly colored; temperature 101°; pulse 120–130, with little volume and very compressible; respirations humid and shallow. There was absolutely no tympany, not any tenderness except over the fundus. The lochia was abundant and offensive. Her features had that pinched, drawn expression that indicates speedy dissolution. Bi-manual examination revealed the uterus perfectly movable, subinvoluted, boggy, and the os patulous. There was no fullness nor tenderness around the uterus. When the hand was withdrawn from the vagina it was literally dripping with pus, the most putrid I ever saw, and if I had not hastened to the door I should have vomited. Here, then, was a woman who was dying from putrid intoxication due to a suppu-

*This case was reported at the time in the Nashville Medical News.

rating process inside of her womb! How could anything short of removal of this intra-uterine decomposition be of any service whatever? With the kind assistance of Dr. W. A. Woollen the patient was placed in Sims' position and a rubber tube passed well to the fundus; a Davidson syringe was attached and a hot 5 p. c. carbolic acid solution thrown into the uterus until the return stream came away perfectly clear. The first few syringefuls brought away a quantity of fetid pus and broken-down tissue. Now mark the result: by the time this little operation was over the temperature had fallen to 99°, the pulse to 80, with plenty of volume, and the whole morale of the patient was decidedly better!

Next day, the 13th, while much better, her temperature was 100° and pulse 100. Irrigation promptly reduced them to 98.50 and 70 respectively.

14th.—Temperature 99°, pulse 90. Irrigation brought away an ounce or two of serum-like fluid. From this time on her recovery was uninterrupted except on the

21st day, when there was a slight rise of temperature, which quickly gave way to another intra-uterine injection. But this fortunate outcome cannot always be expected, even in the putrefactive form of septicæmia, by simply using intra-uterine irrigations, for the very obvious reason that the tissues undergoing this putrid decomposition cannot all be washed away in every case, no matter how thoroughly the irrigations are done. Auvard's experiment goes to prove this. He took the largest size Barnes' bag, which in shape somewhat resembles the uterus, and made a section at the level of the inflation tube; this gave him an opening over an inch in diameter. He now filled the bag half full of ashes mixed with small bits of charcoal not larger than a pea, and with the bag held obliquely introduced Budin's and afterwards Doléris' irrigating tube to the fundus of the bag and washed it out with four or five pints of fluid. The first pint came back mixed with the ashes and charcoal while the balance returned without débris. Repeated experiments convinced him of the impossibility of cleaning the interior of the bag by this plan, so he is led to remark: "Now, if this débris, absolutely free within the bag, cannot be all washed out by the current of fluid, it is readily apparent why shreds of membrane and products of septic degeneration of the endometrium, which are

adherent to a greater or less degree to the surface of the uterus, are less likely to be detached and washed out."

If this is true of shreds of membrane and the products of septic degeneration, who would suppose for a moment that irrigation would be effective when the placenta is retained *in toto*, as often happens after abortion, or in large pieces, as may happen after delivery at any period! Besides, these retained placental tissues often take on or continue a low form of life.

RETAINED PLACENTA AFTER ABORTION CAUSING SEPTICÆMIA.

Case 3.—Mrs. E——— (colored), had missed her periods four and a half months and considered herself pregnant, but during that time had had three or four bloody discharges at irregular intervals.

When called to her she stated that she was having a bloody discharge which had been on her for three or four days. She was in bed suffering considerable abdominal pain, with several degrees of fever and frequent pulse. Put in Sims' position and the cervix exposed, the os was found to be somewhat patulous. Steadying the cervix with a tenaculum, the sharp curette was passed gently over the entire endometrium, scraping out several ounces of putrid detritus, one piece being as large as a goose-egg and consisting of unmistakable placental tissue. The odor was so overpowering that it gave me the sick headache, and the woman who assisted me complained of the same thing. The uterus was syringed out with carbolic solution and the woman put to bed. She was seen next day and found so much better that I dismissed the case. In this case the woman could give no account of the fetus having escaped, nor could I find any resemblance to it in the scrapings. It had probably escaped at an early day—probably the first hemorrhage—or had been decomposed. In either case an argument in favor of leaving nothing in the womb after abortion.

LABOR AT OR NEAR TERM—RETAINED MEMBRANES AND DETRITUS CAUSING SEPTICÆMIA.

Case 4.—Mrs. W——— was delivered at or near term of a putrid-smelling dead child. Within two or three days fever, abdominal tenderness, tympany and offensive lochia were noticed. Vaginal irrigations did no good, so on the fourth or fifth day after delivery

the patient was drawn across the bed, turned on her left side, a speculum introduced and the vagina washed out with an antiseptic solution. The cervix being held down by a tenaculum the uterus was thoroughly curetted, the dull curette being used principally. Quite a quantity of decomposing membranes and detritus came away. This was followed by an intra-uterine douche. This patient's symptoms improved so rapidly that in two or three days the case was dismissed.

So, then, we may safely say that, in view of Auvard's experiments and the occurrence of such cases as the above (3 and 4) that irrigation cannot always meet the requirements and is therefore *inefficient.*

Another objection to the intra-uterine douche is that so frequently it has to be *repeated*, and it may be several times, certainly as often as the temperature rises. Even in a case like No. 2, in which the douche gave most brilliant results, it had to be used *four* times, when, I believe, if the first douche had been preceded or followed by a gentle curetting, the repetition would have been unnecessary. And it is not a great deal more trouble to curette than to irrigate the uterus, especially in properly selected cases.

Again, we often hear of a *death* after intra uterine irrigation. Dr. Garrigues said last year there had been 22 fatal cases since 1884. This leads us to speak of the dangers of the curette. *Peritonitis and great exhaustion from hemorrhage* are stated to be contra-indications to its use, because with these complications the curette is liable to do more harm than good. As stated above, when the microbes have passed into the circulation and set up peritonitis or other inflammatory complications, we cannot hope to remove them by intra-uterine treatment, and we all know how any pelvic manipulation tends to aggravate an acute attack of peritonitis. But it must be remembered that *all* of the microbes do not get into the circulation, and certainly if we have any reason to suspect that there are any decomposing tissues left in the uterus and the degree of peritonitis is not too great, we would be reprehensible to let a woman die without making an effort to remove it. In Case 4 there was a marked degree of peritonitis present and yet curetting promptly relieved her.

It is unnecessary to dwell here upon the diagnosis of puerperal fever. Suffice it to say that any deviation from the normal, as a

chill, rise of temperature, frequent pulse, soreness in the abdomen, difficulty in passing water, or offensive lochia, demands the most thorough investigation as to the cause. Offensive odor, while not universally present in septic conditions of the endometrium, is one of the surest indications we have for prompt attention. The proper plan of treatment in these cases, when we have no suspicion of retained products of conception, seems to be about as follows: On the occurrence of an offensive lochia give a hot antiseptic vaginal wash. This should be done with the woman lying on her back across the bed, her hips higher than her shoulders and the nates resting upon the edge of the bed; an oil cloth falling over the side of the bed conveys the fluid into a bucket as fast as it runs from the vagina. If this does not speedily abate the odor, an intra-uterine douche should be administered with the woman in the same position as for the vaginal wash, or she might have a bed-pan under her. Corrosive sublimate, 1—5000, is one of the best antiseptics for intra-uterine douching. It should be withheld on the slightest indication of toxic symptoms. It is contra-indicated in anæmia, kidney disease and diarrhœa. Dr. Garrigues* speaks favorably of creolin in a 2 p. c. solution. Carbolic acid is objectionable, but is extensively used. The water employed should always be thoroughly boiled first. "The temperature of the uterine douche should not exceed 110° or 115°, and the quantity should not be greater than two or three pints." I use for intra-uterine douching a plain glass tube, which, by heating in a spirit-lamp, can be bent in any desired shape. No speculum is necessary, the tube being guided by the index-finger into the cervical canal, then pushed gently on to the fundus. Of course, we should be sure the fluid escapes freely around the tube, but the os is usually open enough for this in all cases where douching is indicated. If the first douche does not promptly relieve the symptoms, the curette is plainly indicated. I should not waste time with even one douche in any case of septicæmia if there was any suspicion of retained membranes or placental tissue; or if pregnancy had not reached more than four months, or the fœtid odor was accompanied with much hemorrhage, or if the symptoms of toxæmia were severe, or if the patient was so

*Loc. cit.

situated that I could not see her often, but should proceed *at once* to use the curette.

The woman is placed in the same position as for the douche, while the external genitals are thoroughly cleansed and the vagina irrigated with a hot 1—2000 or 3000 bichloride solution. The fundus being located by bi-manual manipulation, the patient is put in Sims' position and the speculum introduced. The cervix being hooked down and steadied by a tenaculum, the canal is dilated, if not sufficiently patulous, with a steel dilator. It is well to get the uterine curve by means of a small, blunt probe, after which the curette, properly bent, is passed carefully and gently over the entire endometrium. The practiced hand can readily tell the difference between normal and abnormal tissue. Quite often it is wonderful the amount of detritus that can be raked out. We can be sure we have thoroughly emptied the womb only when the odor disappears and the cavity perceptibly diminishes. This decrease in the cavity of the uterus during the act of curetting is an important point and may be confidently expected in all cases where the work is properly done. The curette is immediately followed by a hot uterine douche of boiled water containing bichloride, 1—5000, or carbolic acid 3 or 5 p. c., or 2 p. c. solution of creolin. This douche should be given with the woman on her back, unless in cases of early abortion, when syringing out the uterus with a long nozzle hard rubber syringe, will answer every purpose. The long nozzle can, by dipping it in very hot water or greasing and heating in the flame of a spirit-lamp, be bent into any desired shape. After the operation it is considered best by some to leave an iodoform pencil in the uterus; while others prefer a cauterizing antiseptic applied to the curetted surface. In the January number of the *American Journal of Obstetrics* Dr. Polk has an able article on "The Treatment of Acute Endometritis by Drainage." In speaking of that form which follows labor and abortion, he says that the walls of the uterus should be first freed by the curette from any deciduous tissue, all blood-clots removed, irrigation done, and the cavity of the uterus loosely packed with gauze or wicking, bringing the excess out through the cervix and vagina. He claims the best results from this treatment.

In closing this part of the subject I cannot refrain from quoting Dr. Currier's review of Charpentier on

"CURETTING THE UTERUS FOR PUERPERAL SEPTIC ENDOMETRITIS.

"Charpentier says that the cause of puerperal infection is an extraneous septic element which multiplies within the uterus or vagina, penetrates the blood and produces grave, or even fatal, accidents. The development of this micro-organism produces a septic endometritis. General treatment in such cases is useful, but should only be auxiliary to local treatment, which is most efficacious. Intra-uterine injections are frequently useful, but they sometimes fail in producing the desired end. At such a time there is no means so efficient as curetting. The patient should be placed in the obstetric position, the vagina irrigated and the uterus drawn down. If the cervix is not dilated, dilatation should be rapidly performed, and the uterine cavity irrigated with an antiseptic fluid. An antiseptic curette should then be applied over the entire uterine mucous membrane, the scrapings removed, the irrigation repeated, and a cauterizing antiseptic applied to the curetted surface."

When *hemorrhage* follows labor or abortion, it is with very rare exceptions due to some retention within the uterus of some tissue that should have been expected. If the hemorrhage occurs within the first few hours after labor, at or near time, before the os has contracted; the aseptic hand may be passed into the cavity and all membranes, clots, etc., successfully raked out. This, with kneading the fundus, ecbolics, or faradism, will usually arrest the hemorrhage. But this treatment is not applicable after contraction of the os takes place, or after abortions. Here the only rational plan is to thoroughly scrape and empty the womb with the curette accompanied by the douche and all the other antiseptic precautions advised in septic conditions.

Two cases from practice will suffice to illustrate the happy effects of the curette in hemorrhage following labor and abortion.

HEMORRHAGE AFTER LABOR.

Case 5.—Miss W——— was *delivered* of an illegitimate child in the absence of a physician, the labor being precipitate. The child was born breech foremost, and was dead when seen by myself about an hour afterwards. The placenta came away normally. The labor was in no way exhausting and the woman expressed herself as feeling very comfortable. Next day it was noticed that the flow was

too bloody; this increased till by the fourth day the hemorrhage became alarming and the woman seemed in danger of flooding to death. With the approval and assistance of Dr. Woollen the curette was thoroughly used after the manner described above. It was surprising how little scrapings came away, but the hemorrhage stopped, the womb contracted and the patient put to bed feeling much better. There was absolutely no hemorrhage after this except on the third day after the operation a moderate flow came on, lasting only a few hours. This was probably caused by some imprudence, as sitting up.

HEMORRHAGE AFTER ABORTION.

Case 6.—Mrs. S——— was taken on the night of the forty-second day after her last menstruation with sudden profuse hemorrhage. I saw her next day and found her greatly exhausted, having found large quantities of blood and clots. Put in Sims' position, something was seen protruding from the os. The curette brought out first what proved to be the fœtus enclosed in its sac, and which I present to you. Several spoonfuls of placental tissue was brought away, when, the hemorrhage stopping and the uterus contracting, the cavity was syringed out and the patient returned to bed. There was no return of the flooding.

The question of removing at once with the curette *all membranes and placental tissue that do not otherwise come away promptly*, has been hotly contested. In view of the fact that such retention is often the cause of septic process and hemorrhage, it is the practice of a large number of our best men to remove them at once with the curette. This saves anxiety and future trouble. It seems to me, however, we ought to be conservative, and if the placenta comes away in toto, it is better to wait and not run the risk of infecting the woman by removiug remnants of membranes. This is specially applicable to cases at or near full term. If a large piece of membrane, or even a small piece of placenta was retained, I must confess I should want to go after it! Waiting is good policy sometimes, but not always free from danger.

SEPTICÆMIA FROM RETAINED PLACENTA AFTER ABORTION.

Case 7.—Mrs. ———— aborted about the seventh or eighth

week. From a false sense of modesty she deferred even a vaginal examination till after a few days, when marked symptoms of septicæmia supervened. Gaining her consent I removed with the curette a quantity of offensive tissue which quickly brought relief.

PLACENTA AND MEMBRANES RETAINED FOR A MONTH WITH SEPTICÆMIC SYMPTOMS.

Mrs. B——— aborted while in the water-closet at about the second month. I saw her the second day afterwards, and, feeling sure there was retention, insisted on curetting. As I could not attend to it that day, an appointment was made for the next. But when I called next day she refused to let me do anything, so, as a matter of necessity, I retired from the case. She was then suffering with septic symptoms of not a very severe type. The physician who was called in to take charge of the case treated her faithfully for *four weeks* with medicines and vaginal douches, the patient being sometimes better and sometimes worse. Finally he told her that curetting would have to be done, which he did with immediate permanent relief to the woman.

While the average practitioner ought to be able to do this little operation, I don't think it justifiable for any one to enter the uterus without having a clear, comprehensive knowledge of what asepsis means. Gentleness and thoroughness are among the essentials to success. As to the use of an anæsthetic, I let each case be a law to itself. If a woman can easily and willingly bear the operation I do not use one, but if she is timid, or very sensitive, or peritonitis is pronounced, I sprinkle a little chloroform on a handkerchief and hold it to her nose.

I have made no reference, thus far, to the kind of curette, whether dull or sharp. While, as a rule, the sharp curette is more effective than the dull, it is less safe; for that matter, however, I consider either the sharp or dull curette a dangerous instrument when in the hands of an incompent man. My preference is for the sharp instrument, with occasional use of the dull, when there is much softening of the uterine walls. For the benefit of those who may be epecially interested in this universally important subject, I append a few references that have proved of great service to me in the preparation of this article :

"The Use and Abuse of Antiseptic Injections in Obstetrical Practice," by Dr. H. J. Garrigues; Transactions American Gynecological Society for 1889, and reported in the *New York Medical Journal*, September 28, 1889.

"A Plea for the Active Treatment of Puerperal Endometritis by Means of the Curette," by Dr. Egbert H. Grandin. Read before the Medical Society of the County of New York, December 24th, 1889, and reported in the *New York Medical Journal*, February 16, 1890.

"Remarks on the Use of the Uterine Curette," by Dr. Walter B. Chase. Read before the Medical Society of the County of New York, at its eighty-fourth annual meeting, and reported in the *New York Medical Journal*, March 8th, 1890.

"The Treatment of Acute Endometritis by Drainage," by Wm. M. Polk. Read before the Obstetrical Society of New York, May 21st, 1889, and reported in the *American Journal of Obstetrics*, January, 1890.

"Curetting the Uterus," by Sabail; *Journal de méd.*, October 6th, 1889, and given by abstract in the *New York Medical Journal*, March 22d, 1890.

THE PROPRIETY OF INTERFERENCE IN GUN-SHOT WOUNDS OF THE ABDOMEN.

By John Hey Williams, M.D., Asheville.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.)

The question of the propriety of surgical interference in gun-shot wounds of the abdomen is one of general interest to the profession. It is a question that as yet is in a formative stage, though I think that the tendency of the day is toward a bolder and more advanced policy in dealing with wounds of this character.

The do-nothing plan of masterly inactivity, so-called the expectant plan, is to my mind a cowardly method of dealing with the most fatal of all trunk wounds.

I am gratified to present to your body to-day the report of a case that I regard as of much importance as a mile-stone on the road of progress to a better and safer method of dealing with such cases. I shall give you the details of the case as succinctly as possible, leaving the matter with you for further comment.

On April 26th, at 4 p. m., was called by Dr. A. S. Whittaker, of Biltmore, two miles out of Asheville, to see with him a case of gun-shot wound of the abdomen. Dr. Whittaker had been called to the case immediately after the shooting, which occurred about 1 : 30 p. m.

An over officious deputy sheriff brought Dr. Whittaker from the side of the patient to the office of a justice of the peace before he could do more than minister to the immediate wants of the man. While in town, recognizing the gravity of the case, and having but little faith in the do-nothing plan, he requested me to accompany him. We found the patient, Charles Walker (colored), aged 22, lying upon his right side upon a pile of straw and ragged bed-clothing, in a small shanty which had been used for the storage of tools, etc., of a brick-yard near by in which the man had been employed. His face was pinched, extremities cold.; complained of a smothering sensation in chest and fluttering of heart.; sick at stomach; some vomiting. On inquiry, he stated that he had been

shot about three hours before in an altercation with another negro, who stood about two paces in front of him.

The pistol used was a 32-calibre. The concussion was sufficient to knock him down. He got up and grappled with his assailant, knocked him down and took the pistol from him. He then noticed the blood on his clothing, which was the first he knew of his having been wounded.

Inspection showed a small powder-burned hole in his outer flannel shirt and a ragged hole in the knit under-shirt. There was a small wound just in the left edge of the umbilical pit or depression; a piece of strangulated omentum was protruding from the small opening, evincing the opening of the peritoneum. The abdominal walls were rigid, the recti muscles especially tense.

A short consultation decided us to make an exploratory opening to determine the course of the ball and the damage done to the viscera. On account of the dark and filthy condition of the shanty we moved the man to an empty box-car standing on the side-track near by, placed the man upon a cot and prepared for the operation. Some luke-warm water was procured from a house near by. No hot water could be had and darkness was fast approaching. Dr. Whittaker took charge of the chloroform and kindly handed me the knife. I prepared my hands by first washing them in warm carbolized and borated water, then rubbed them well with a bi-chloride tablet, then rinsed them in the carbolized water. A probe-pointed bistoury was next passed over a grooved director and the wound enlarged upward one and a half inches and some two and a half inches downward. Passing two fingers into the opening, I first swept them over the transverse colon and under side of the stomach. Finding them intact, I then passed them over the convolutions of the ileum. I soon felt an opening. Drawing up the loop, I laid it on the abdomen and was able to inspect it leisurely. I found an opening near the mesenteric attachment, oval in shape, about five by seven mm. in size. The mucous membrane was everted, completely occluding the opening. Turning the gut over, the opening of exit was found just opposite, rather more ragged in outline, but completely plugged by the everted mucous membrane. I wiped clean the gut with my hand, rinsing it in the carbolized water and closed openings with the Czerney-Lembert suture, using an ordinary sewing-needle and carbolized silk, making the suture in

the line of circumference and not the axis of the bowel, since it is obvious that the loss of tissue in inverting the edges and closing the opening, if taken from the circumference, would diminish the calibre, producing to that extent, at least, a stricture of the bowel. Carefully wiping the intestine, I returned the loop and drew up the adjoining loop to the left, where I found two other openings of the same character, one of entrance and one of exit. Closing them in the same manner and ligating two small mesenteric vessels, the loop was cleansed and returned in the same manner. I carefully ran over the remainder of the ileum, but found no further injury. Careful inspection, however, revealed a long rent in the descending colon near the sigmoid flexture diagonally across the gut. The rent was closed in the same manner. I was unable to find the ball, and evident signs of failure of the vital forces of the patient at this juncture compelled a speedy finish to the operation. The abdominal wound was closed with deep wire sutures, which included all the coats of the abdomen as well as the peritoneum. Iodoform was freely piled upon the line of the incision, a borated cotton compress applied and the abdomen enveloped with a firm bandage. No water was used in the cavity whatever, the gut being cleaned with the fingers after rinsing the hand carefully in the carbolized water. The course the ball took showed that it had been deflected by the cicatricial tissue of the umbilicus, the range being downward, to the left and slightly backward. There was no escape of fæcal matter owing to the close apposition of the folds of the intestine and the occlusion of the holes by the everted mucous membrane. As soon as the operation was completed one quarter grain of morphia was given hypodermically. Patient rallied from shock of operation in about two hours. The further progress of the case was uneventful, and may be epitomized as follows :

April 27, a. m.—Has rested well, pulse 78, temperature 99. Very little pain. Half grain of morphia every four hours. Tablespoonful of milk every two hours.

April 28, a. m.—Pulse 78, temperature 99.

3 p. m.—Temperature 99 4-5. Ordered tincture of aconit, gtt. 1½ to 2 every two hours.

April 29—Temperature 98¾, pulse 68. A little tenderness over abdomen. Slight tympanitic note over epigastrium and over liver.

Gave powdered opium instead of morphia. Complained of gasses in retum. Gave an enema of glycerine, passed ball with stool.

April 30.—Condition same except that temperature jumped to 101 about 4. p. m.

May 1.—Morning, temperature 98, pulse 68. Gave milk and beef tea. Small enema of warm soap-suds, followed by full movement. Some cough, for which gave mur., amon. and comp. glycrrh. mist. moved back into the shanty, car wanted for service.

May 2.—Pulse, temperature and respiration normal.

May 3.—Same. Bowels moved normally.

May 4.—Gave oat flakes with milk.

May 5.—Removed wire sutures, dressed with adhesive straps, wound thoroughly well, closed except at lower angle, where skin was not in good apposition.

May 6.—Dressed with broad pieces of adhesive plaster, with perforated edges, to lace over borated cotton pad. Got out of bed and walked out of shanty.

May 16.—Going about freely, says he has very little tenderness in abdomen, sudden movements or jars to abdomen cause a slight uneasiness. Pulse and temperature normal.

HYSTERO-NEUROSIS—THE ANNUAL ESSAY.

By I. W. Faison, M.D.

(Read before the Medical Society of North Carolina at Oxford May 27th, 1890.)

Mr. President and Gentlemen:

You will please allow me the pleasure of thanking you for this unsought honor of being your annual essayist. The subject to which I wish to call your attention is

HYSTERO-NEUROSIS.

In selecting this subject for your consideration I shall claim nothing very new, but something that I hope will interest you and something, perhaps, that may be of much benefit to some of you at least, as you follow your vocations in the future.

The first impression made, I suppose, is that I shall impose upon you a theoretical, high-flown article on this fancy subject, as it were. Instead of this I shall deal in plain, every-day, common-sense logic. It is a subject that has been of much interest to me for sometime, and as I go along in my professional life I see more and more to learn and to be of untold benefit to many of my patients.

What is hystero-neurosis? You all well know that the nerves that supply the uterus and ovaries in their terminal filaments are closely connected with the filaments that lead back to the central, spinal and sympathetic nervous systems. You furthermore know that the equilibrium of the utero-ovarian nervous system is essential to the general welfare of female life. Therefore by hystero-neurosis I mean that there are derangements and disorders in the uterus or ovaries sufficient to disturb the nervous system of these organs, which manifest themselves in the distant organs of the body that are free from structural lesions in their anatomical make-up. These disorders in uterus or ovaries may be either physiological or pathological.

The physiological causes are due to functional activities of the uterus and ovaries unduly increased both at the beginning and ending of the menstrual life and also during the entire menstrual periods of many women.

Case 1.

In my note book I find a very interesting case that explains very fully and forcibly a neurosis of the bladder due to this very cause. A young lady who had suffered a good deal with malarial poison, showing itself in the intermittent fever type, a few years after the functional developments of puberty. After the cessation of the malarial trouble she began to complain with painful menstruations, and as she grew older the pains increased and the flow became more scanty. Under the sedative plan of treatment she got along badly at best. After awhile she was married, and I hoped that she would possibly get better, still the trouble continued for nearly two years. At this time the bladder began to resist so much encroachment, and at each period she suffered with most violent and excruciating tenesmus of the bladder, with bloody urine. As soon as the time for the period passed the bladder symptoms would subside. Up to this time examination by vagina had been refused. On examination I found stenosis of the os uteri to almost occlusion, with deep red patches of erosion around the cervix. The catamenial flow being retarded, though scanty as it was, and the congestion of the uterus pressing on the filaments reflected to the bladder and produced the violent symptoms and excruciating pains. Probably you gentlemen who do not live in a malarial section will not readily agree with me at the suggestion of malaria bearing any part in the causes of such troubles. Still I am thoroughly convinced that such is the fact in a great many cases, while I freely admit that such cases occur frequently where no malaria abounds.

In the pathological causes of these neuroses this same cause (malaria) plays even a more important and unpleasant roll. I performed rapid divulsion of the entire cervical canal; curetted the cavity both of the cervix and the entire cavity of the uterus; cauterized the surface completely with pure carbolic acid; placed a perforated hard rubber stem (Goelett's) and let it remain for two days; took it out, swabbed out the uterus and placed a larger size stem and retained for one week; during the whole time I kept her strictly in bed in the recumbent position, which is exceedingly important. This treatment completely relieved my patient, both of the menstrual trouble and the neurosis of the bladder, and has had no return of the symptoms now for over a year.

Now, if the disorders and derangements of early menstruation play such an important part in establishing the causes for these reflex neuroses. Is it not our duty as professional men to trouble ourselves more than heretofore and instruct the mothers of the extreme importance of paying every necessary care and attention to their daughters that this important function may be regularly established. I dare say that a great many young girls never hear of this function until at some unexpected moment they are abashed at its sudden appearance. As a rule, if this important function is not thoroughly established, it will play quite a part as a physiological cause in developing reflex neuroses. The pregnant uterus during its functional activity, as a physiological cause, produces many and varied neuroses. The solar plexus of the sympathetic system and the pneumogastric nerve are the sources through which many of these neuroses are manifested. The irritated, retching stomach in morning sickness, torpid liver, painful and palpitating heart, shortness of breath simulating asthma, free flow of saliva from the irritated glands, intense desire to sleep during daytime, are some of them, and have been looked upon from time immemorial as the doubtful signs of pregnancy. Will treatment directed to these neuroses *per se* be of much material benefit? I can say, most emphatically, *no*, for too many times have my hopes been disappointed after every effort had failed, and I am satisfied that most of you will readily agree with me.

The pathological causes seated in the uterus and ovaries and producing so many reflex troubles are of much more significance to us as practitioners. These causes are due to structural changes in the tissues themselves. Case No. 2 will correctly and vividly explain the points I wish to impress.

Case 2.

Married woman, age 33. Had given birth to three living children; two years later, at the third month, had an abortion; since then no conception, but had suffered with dysmenorrhœa. She was suffering with an intense and persistent pain around and about the heart and lower region of the left chest and an abiding faith in a serious heart disease, and almost had her day fixed to die. She was and had been suffering with dyspepsia. I suggested that it was the dyspepsia and reflex neuralgia around the heart, and told her I

would treat her for that. She, being an intelligent woman, said that she had been thoroughly treated for that trouble without benefit, and if I could find nothing else the matter she would tough it out and die without medicine. I then realized the fact that I must do something. I asked for a vaginal examination and found a large subinvoluted uterus, retroverted, and extensive abrasions around the cervix and tenderness over the left ovary. I stretched the internal os, curetted the internal cavity and cauterized with pure carbolic acid, replaced the uterus at once and held them with a pessary; used tampons of boro-glyceride and glycerine (2 ʒ to Oj.) and tonics, with pure diet. The pains almost at once began to improve. After the third month she conceived and her troubles all subsided and she pronounced herself a happy woman.

Case 3.

This case shows where physiological and pathological causes at different times produce the same reflex manifestations :

Married woman, age 47. At 15, when her menstrual life began, it was scanty and painful for four years, and during this time she suffered with asthma. After that time her periods became full and free and the asthma entirely disappeared; at 35 she married and gave birth to two children and one abortion; at 41 her menses began to be irregular and the asthma at once returned. She was treated by two physicians with every remedy for asthma known to medical men, with but slight palliative effects. At this time she came under my care, and from the history as related I examined her per vagina. I found a hard fibroid tumor the size of a small orange in the posterior wall of uterus, dragging the fundus backward, with a small contracted canal through the cervix, and erosions of the cervix. I dilated the canal, curetted the cavity and cauterized with pure carbolic acid. Gave free and repeated doses of ergot and morphine, which at once ameliorated the asthmatic attacks. The menstrual flow became more regular and free after the treatment, and the asthma troubled her but very slightly. I have kept up the ergot with the view of retarding the growth of the tumor until the flow shall cease, and then I hope it will lie dormant and produce no further trouble. The morphine cuts short the nervous impression and the asthmatic attack is avoided, and my patient is going on

through life in rather a comfortable way for an asthmatic. Thus you will notice the physiological cause producing asthma relieved by nature, and at the menopause in same patient from a pathological cause the identical same neurosis produced. If after the menopause is passed and the asthma continues to a degree sufficient to trouble her, then the galvanic puncture, as used by Apostoli, can be tried.

The most of these reflex neuroses are carried through the filaments of the sympathetic nervous system, as the filaments of the ganglionic system ramify and connect so closely with the filaments of the utero-ovarian nervous system.

The solar plexus being the largest of the ganglionic system, the impressions are readily felt there, and this is established by the fact that at almost every derangement of the uterus at once the stomach or liver begins its sympathy, and as the filaments of the sympathetic system blend so freely with every other system, also the glands of every kind, and all other organs of the body, you can readily perceive how these neuroses may be manifested in them all. Whenever from increased functional or pathological disturbances in the utero-ovarian system shock is produced, it is flashed over the whole organism, and these neuroses are manifested either in a nauseated stomach, torpid liver, painful and palpitating heart, asthmatic breathing, and the effects on the brain are such that our patients complain of unpleasant fullness on top of the head and some pain in back of neck and feign insanity, mostly of the melancholic variety. These reflex neuroses of the brain are carried then also through the cerebro-spinal system. The circulation is also more or less controlled by this same influence, and when this impression dilates the arterioles, redness of the skin and hot flushes in the face, and when contraction follows coldness of the surface and clammy, cold perspirations ensue, especially over the hands and feet. We also note the impression on the alimentary canal in the form of gaseous distention, constipation and diarrhœa, that so frequently, and I would say almost always, accompany uterine troubles of much structural change.

What are the causes of these reflex neuroses? We must look to the uterus or ovaries for them—either from physiological or pathological causes. For a long time the ovaries have been looked upon as the seat of disease for such reflex troubles, and just a few years ago it was exceedingly fashionable in the larger cities to unsex

every woman that even suspicion would allow; but now I am glad to say that wiser counsel prevails, and the tide has turned against such a wholesale onslaught of such an important organ. The office of the uterus is such that often structural changes are produced in spite of the most extreme care, and hence it is to this organ that, in my opinion, is the seat of the disease, that shocks the nervous system and produces the many unpleasant neuroses. These structural changes are lacerations of the cervix, subinvolutions with or without displacements, displacements of several forms, abrasions of the cervix and catarrhal troubles of the cervical canal and cavity of the uterus. While I am free to admit that the ovaries are the cause, in a great many cases, and deserved in many cases of no reflex, still I am fully persuaded that they are not guilty of all that they are accused of. So, according to my experience, and after due consideration of the reading of articles on this subject, I am of the opinion that the uterus is decidedly more frequently the seat of the disease that causes these reflex neuroses.

The diagnosis is not so easily determined as might at first be surmised. It must be largely made by exclusion—examine the organ thoroughly in which the trouble is—to know whether there is any structural lesion present or not. In hystero-neurosis there will be no structural lesion in the organ of the distant manifestation. Decide upon whether or not you have a true local neuralgia to contend with—the temperature is always normal. The symptoms present will always be severe and decidedly out of proportion to what would appear if the trouble was a local one. Examine carefully the uterus and ovaries if no trouble, then you can at once discard the idea of reflex hystero-neurosis. If there is trouble, and able to discover any local trouble with the organ affected, with exaggerated symptoms, you can decide that you have a neurosis to contend with. Use of sedative remedies will aid you materially, as they do so little good in neuroses of this nature.

The progress is generally favorable. At the same time it must be guarded till you have established fully the cause and can remedy it. Relief may come suddenly or slowly, as in the first case there was relief almost at once, in the second in a short while, and in the third much relief, but still not a complete cure. I have seen violent retchings of the stomach cease in one night after dilatation of the external os and cautery with carbolic acid, still I have seen some

that nothing but emptying the uterus would relieve. I must insist that to insure the prognosis favorable you must find the cause, and when the cause is removed, then, and not till then, can you expect to see the neuroses disappear.

The treatment is both palliative and curative. The palliative remedies are nervines, tonics, sedatives and galvanism, which should always be tried freely in young ladies and married women. This should be applied as directly to the filaments of the uterine nerves as possible, both through the pelvis from the sacrum to the front hypogastric lower portion of the abdomen and through the vagina. As a sedative you will find this very beneficial. If the above treatment be not successful, then you must correct any changes in the uterus or ovaries that may be present before you can look for a cure.

The neuroses from a pregnant uterus must be treated as to the cause. If pathological, such as congestion of the cervix, local bleeding will do good, and the causes, of whatever nature, at the cervix, must be treated with dilatation or cauterizing the cervix if it should need it. I prefer the carbolic acid to cauterize the cervix and its canal. In a good many cases I have seen much benefit follow one application. If from physiological causes, as distention of the uterus, as gestation goes on, nothing much can be done but the use of bromides and sedatives, unless it becomes necessary to empty the cavity, which will relieve the neurosis *most* generally. If from stenosis of the cervix, and congestion, rapid divulsion and treatment of the cervix, as reported in case No. 1.

The pathological changes in the tissues should be treated as indicated to bring about a cure in the parts, and as you will find indicated in the text-books. The lacerations should be operated on and united, the displacements replaced and kept in *situ* as best you can, with proper pessaries of whatever kind that will meet the end aimed at. Catarrhal diseases of the cervix and the body of the uterus should be treated with the curette (I always prefer the sharp) and cauterizing with carbolic acid, nitric acid and nitrate of silver (I prefer the carbolic acid), unless there is much enlargement of the uterus from subinvolution, then the fuming nitric acid, and apply it every ten or twelve days. The local manifestations need but little attention, still I would advise some local treatment, as liniments or plasters and sedatives, more to allay the expectations and anxieties of the patient than for any expected good. Cure the causes, and the reflexes will take care of themselves.

*ARE THE MASSES PASSED AFTER INGESTION OF LARGE DOSES OF SWEET OIL GALL-STONES?—SUBJECT FOR DISCUSSION BEFORE THE MEDICAL SOCIETY OF NORTH CAROLINA.

By Thos. S. Burbank, M.D., Wilmington, N. C.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

The relief given by the administration of large doses of sweet oil in hepatic colic and the subsequent passage of dark green masses led early observers to relegate a specific action to this remedy in causing the expulsion of gall-stones.

At this time the physiological action of remedies was but little known and chemical analysis supplemented by visual observation; therapeutical investigation, in the hands of empiricists, resulted in each remedy having a selective and specific action ascribed; consequently they thought the masses found in dejections after large doses of sweet oil resembling gall-stones were gall-stones. Later investigators, finding these masses after giving the oil, and discovering that the diffusion of fat was accomplished by the bile, that fats were colloidal substances, therefore possessing feeble power of osmosis, that oil would pass through a membrane moistened with bile with great facility, and that the blood of the portal vein was by far richer in fat than the blood of arteries and systemic veins, thought the oil had a selective action for the liver and that the masses were gall-stones.

"The chief chemical constituent of human gall-stones is cholesterin, other constituents are the bile pigments, either by themselves or in combination with lime and very small quantities of the bile acids also in combination with lime, their color varies from white to black." Cholesterin crystallizes from gall-stones after solution in boiling alcohol.

The chief chemical constituents of the masses are soap and oil, other constituents, bile pigments and very small quantities of cholesterin, their color is dark green. Cholesterin crystallizes from masses

---

*See discussion of this topic in June Journal.

by first evaporating to dryness and pulverizing, treating with ether, filtering and evaporating, adding solution of caustic potash, washing on filter with distilled water, drying and again adding ether, evaporating and dissolving in boiling alcohol.

The ease with which we obtain cholesterin from gall-stones and the quantity they contain (70 to 80 per cent.) and the difficulty encountered in obtaining it from the masses, and the quantity they contain (less than 1 per cent.) prove conclusively that the masses are not gall-stones; and the palpation of the abdomen of a patient, with thin walls, who has taken large doses of sweet oil for hepatic colic, reveals gall-stones in gall-bladder. Subjoined are four illustrative cases of the administration of the large doses of sweet oil:

Case 1.

Patient—Bilious temperament, no history of hepatic colic; administered goblet of sweet oil on empty stomach at night, and repeated dose the following morning; evacuations contained large quantities of masses dark green and whitish in color.

Case 2.

Patient—Sanguineous temperament; no history of hepatic colic; oii administered as in No. 1; result same, though quantities smaller.

Case 3.

Patient—Lymphatic temperament; no history of hepatic colic; oil given as before; result as in No. 2.

Case 4.

Patient—Bilious temperament; no history of hepatic colic; oil given as in others; no masses in evacuations.

In the first three cases oil preceded by hyd. chl. mite; in No. 4 no calomel given.

REPORT OF THE SECTION ON MATERIA MEDICA AND THERAPEUTICS TO MEDICAL SOCIETY OF NORTH CAROLINA.

By J. W. McGee, Jr., M.D., assisted by E. H. McCullers, M.D.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

During the past twelve months very little has transpired of real therapeutic value, but since our last meeting additional information has been furnished as to the action of Sulphonal and Phenacetine, as well as several new hypnotics and antithermics recently introduced.

SULPHONAL.

While we find a goodly number advocating the use of sulphonal as a hypnotic, its disadvantages are such as to prevent its ever becoming a therapeutic agent of much value. Among its many disadvantages may be mentioned :

1. Slowness of action in producing sleep.
2. The tendency which its hypnotic action has to persist during the succeeding day.
3. Difficulty in determining individual dose.
4. Unpleasant secondary effects, viz : excitement, temporary delusions, nausea, dizziness, headache, ringing in the ears, vomiting, sense of fatigue, of depression and of confusion of mind, disturbance of gait, sense of drunkenness, intense thirst and great dryness of mouth, erythematous eruption, aphasia, diarrhœa, etc.
5. Uncertain hypnotic action.

An especially annoying feature in the action of the drug, appears to be that, while in some cases large doses may be taken without producing any effect; in others small doses produce the most violent toxic symptoms; while again even those cases which in some instances have proved themselves unaffected by large doses of the remedy, and in whom it may have previously produced satisfactory sleep, suddenly will be violently poisoned by doses which they had taken previously with impunity. Exhaustion, diarrhœa, vomiting

and collapse follow doses which had previously been almost inactive. It is claimed to have no deleterious action on digestion, secretion, circulation or respiration. Is tasteless, has no odor, and is easy of administration.

PHENACETINE.

Phenacetine has evidently borne the test of time and use better than sulphonal. It is said to be more valuable as an analgesic than as an antipyretic, and is especially valuable in the treatment of rheumatic endocarditis and nervous polyuria, as well as in whooping-cough. In the latter disease cases in which, before the employment of this drug, the paroxysms of coughing occurred ten to fifteen times daily, under treatment with this remedy were reduced considerably, and in some cases disappeared in a very few days, only occurring occasionally at night, after the use of the drug was suspendsd. In the case of a child three months old, with severe laryngeal spasm of hourly recurrence, after atropine, antipyrine, quinine and other remedies, so often employed in this disease, had failed, half grain doses of phenacetine in 10 drops of glycerine, administered every four hours, gave almost immediate relief.

Phenacetine is an antithermic, but it is chiefly as an analgesic that it is prescribed, though it is claimed to be an antipyretic of reliable action, producing no nausea, vomiting, cyanosis or syncope.

It is recommended as an antineuralgic in 15-grain doses and in all cases of vaso-motor neuroses and in locomotor ataxia, but its insolubility renders it in a marked degree inferior to other members of the aromatic series and in particular to antipyrine.

CHLORALAMIDE.

While, at a first glance, it may seem quite superfluous to add another to the already long list of hypnotics, closer observation will show that this is not the case. Whilst, on the one hand, many like promptness in action, on the other hand many of those whose hypnotic action is rapid, are accompanied by such grave symptoms that their use can only be resorted to with extreme caution. The actual number of reliable, efficient, and, at the same time, safe hypnotics, is very small. The introduction of a new one, which promises to combine the above named desirable properties, should be joyfully welcomed rather than be regarded as a superfluous addition.

Among many recent hypnotics chloralamide is brought forward with less than the usual flourish of trumpets which heralds the birth of a new drug, yet the opinions of a number of observers seem to indicate that chloramide promises to be a valuable addition to our list of new drugs.

Experiments already made with it indicate its adaptability in all cases of sleeplessness due to nervous excitement, neurasthenia, phthisis, heart disease, spinal disease, and all cases of insomnia not accompanied by acute pains.

Being insoluble in ordinary menstrua, it should probably be given in solution with some form of spirit, as wine or whiskey.

A number of cases have been reported in which chloralamide was administered by enema with satisfactory results, no irritation being produced, even after frequent repetition, though its action was slower than when given by the mouth. It is best to give it about two hours after eating, and as its action is somewhat tardy, it should be given from one-half to two hours before the desired sleep is expected to begin. The usual dose is 15 to 60 grains, though rarely should the dose exceed 30 to 45 grains, at very serious and annoying after effects have followed the administration of large doses, as was the case of two healthy young women who received a dose of 60 grains each in the afternoon; each in an hour complained of dizziness and great excitement, while one complained of giddiness and staggering, with severe headache in the posterior part of the head, nausea and an inclination to vomit. In one of these cases the stomach was washed out and found to be empty, though this procedure did not succeed in arresting nausea, showing that chloralamide is absorbed and that the effect must be due to the presence of the substance in the blood, by which the nervous system is effected.

Ordinarily large doses do not affect the heart and circulation, although it has been noticed that the frequency of the pulse is slightly increased. These symptoms, it is claimed, are not of long duration, and are less marked than those following the exhibition of chloral. The sleep produced by chloralamide is said to be deeper than that produced by chloral, and will vary according to individual peculiarity from six to ten hours.

Chloralamide is a hypnotic pure and simple, and does not partake of the properties of an anodyne.

In diseased conditions of the system chloralamide seems to be borne with a remarkable degree of tolerance; although some unfavorable results have been reported, few cases are on record in which it was wholly useless or in which serious after effects were observed.

Chloralamide has been used in a large number of diseases, both organic and functional, when a hypnotic was required, and is adapted to all cases of insomnia, but is especially valuable in those cases due to organic disease in which other hypnotics are often contraindicated, and that class of cases characterized by unusual excitement, as diseases of the circulatory system, respiratory neuroses, diseases of the nervous system, as well as the sleeplessness which occur in the course of other diseases, as rheumatism, typhoid fever, and organic and functional disorders of the alimentary tract, as ulcer, cancer, chronic dyspepsia, etc.

It is not to be regarded, however, as a hypnotic which will invariably succeed in producing sleep, since in many instances it may entirely fail, in others sleep may be late in making its appearance, while in certain cases the after effects may be decidedly annoying.

Two cases are reported in which chloralamide is claimed to have an almost specific action on chorea. One case, a boy of 11 years of age, was cured in five days by 15 grains of the drug three times daily, the other, the case of a girl, after receiving no benefit from other forms of treatment, was afforded relief in eight days, but this claim is as yet based on insufficient testimony to have much weight.

When administered in phthisis it was found that the troublesome night-sweats disappeared.

Chloralamide has been experimented with by a large number of observers in a great many different diseased conditions, and while no unpleasant after effects were noticed by many authorities, no disturbance of the heart, respiration, temperature, kidneys or appetite, a few have occasionally found slight headache upon waking, or with lassitude and a desire to sleep during the next morning.

Other unusual effects may be noted, as vertigo, thirst, nausea, dryness of the mouth, delirium, rapid and feeble pulse. No accidents have been announced thus far, and but few unfavorable reports, even with the very numerous and varied classes of diseases treated, and everything points to its favorable reception at the hands of the profession.

It is to be hoped that continued investigation will prove equally satisfactory and that in chloralamide we may find a safe, reliable and efficient hypnotic.

SOMNAL.

Somnal is said to be a mixture of alcohol, chloral and urethan. It is claimed to exercise no unfavorable action on the pulse, respiration or temperature. The dose is stated to be thirty drops in syrup. A well-known therapeutist says: "Somnal is a good hypnotic, and has the desired effect in *most* cases." Other observers say it has a hypnotic action in about 30 per cent. of cases, and that it has an undesirable, and often very dangerous, secondary action on the heart. It is also claimed that the chemical statements made by its inventor are incorrect.

URAL.

Ural is found by a combination of chloral and urethan. It is claimed to produce no disagreeable accidents, and in therapeutic doses no disturbance of blood-pressure. No discomfort or distress results on waking from sleep produced by it. It is said to be possessed of only moderate hypnotic qualities and may be used several days without inconvenience. Large doses of the drug produces loss of mobility with insensibility and unconsciousness. Respirations are increased in depth and frequency, but the blood-pressure is maintained at the normal point. Temperature is lowered and diaphoresis and diuresis sometimes occur. It is best administered in cases of cardiac disease free from great dyspnœa. It seems to have no toxic effect except in large doses. In some cases it has caused nausea and gastric distress. The usual dose is 15 to 30 grs.

HYDRACETINE.

Hydracetine is the active principle of pyrodin, being five times more active. Occurs in white, odorless and almost tasteless powder. It has been employed in cases of typhoid fever, pneumonia, phthisis, scarlatina, erysipelas, acute milliary tuberculosis, etc., and found to be a powerful antithermic. Administered in doses of 1½ to 2½ grains daily it produced within two or three hours a reduction of temperature of from 1½° to 2°, and in some instances even 3°. This reduction of temperature, however, is only transient, and after four or five hours the original temperature is regained.

Hydracetine produces diminution in frequency of pulse and respiration with production of profuse perspiration. Like other antithermic remedies it controls the pains of acute rheumatism. In divided doses of 1½ grains daily it causes remissions for several hours. Employed in the form of an ointment of 10 per cent. of hydracetine, favorable action is produced in psoriasis, while it is also useful as an analgesic in cases of sciatica. Hydracetine may be used freely as an external application, but great care must be used in its internal administration. Not more than 1½ grains should be given at a single dose, preferably ¾ of a grain every hour. Even then the treatment should not continue longer than three days.

METHACETINE.

Methacetine occurs in shining, white, odorless and almost tasteless scales. It is an active antipyretic, three, four, or even five degrees being lost within a few hours after the administration of a therapeutic dose. In doses of 2 or 3 grains given to a child it exerts a marked antithermic action, the reduction of temperature being gradually produced, and remaining at the lowest point several hours, then gradually increasing. Frequently marked perspiration is produced within an hour after its administration. It has been employed in pulmonary tuberculosis, tubercular meningitis and in pneumonia, the patients all being children. In one case it produced slight collapse, but never vomiting, ringing in the ears, vertigo or erythema. In its action methacetine is said to correspond in every respect to phenacetine.

EXALGINE.

Exalgine, a compound obtained from one of the products of the destructive distillation of coal tar, presents itself in the form of fine needles or large white tablets. It seems closely allied to antipyrine, though its effects on the sensorium are more marked than the latter, while it exerts a less marked action as an antipyretic. It is best administered in powder or some alcoholic solution flavored with an aromatic. The usual dose is 4 to 6 grains given at once, or 6 to 12 grains given in twenty-four hours. The analgesic effect is claimed to be very marked in all forms of neuralgia, especially congestive and dental neuralgia, also including visceral neuralgia, in which it is even claimed to be superior to antipyrine. It is said

that no gastro-intestinal irritation, rash or cyanosis has been noticed after its administration. It is also noted that after the physiological effect of the drug has been developed, while painful sensations are destroyed, the tactile sense remains unaltered.

Exalgine is eliminated by the urine, upon the quantity of which it exerts a marked influence, diminishing the qnantity of the secretion. In diabetes it diminishes both the quantity of urine and sugar eliminated.

Dr. Dujardin-Beaumetz says of exalgine: "After antipyrine, and almost at an equal rank from an analgesic point of view, I place methyl acetanalid (exalgine), and if this methyl compound were more soluble, it would certainly deserve to occupy the first place, and this, because it is more active and because under its influence we have never seen an eruption appear." Exalgine given in doses of 4 to 12 grains modifies considerably the pain of a patient suffering with neuralgia or any other painful affection. In these doses it is said that it has never produced any other trouble than slight vertigo and ringing in the ears.

Exalgine is poisonous when administered in doses equivalent to 7 grains to every two pounds of body weight, so that in ordinary therapeutic doses it may be stated to be absolutely inoffensive, and that this new remedy is less dangerous than aconitine, digataline and all the alkaloids frequently given to patients.

Exalgine is especially valuable from the fact that it does not irritate the stomach, and the dose required is small

References.—Therapeutic Gazette, "Notes on New Remedies"; *Pharmaceutical Record, National Druggist, American Druggist, Medical Record, Medical and Surgical Reporter.*

PERPLEXING SYMPTOMS ARISING DURING TREATMENT OF A CASE OF OPIUM HABIT—WHAT NAME SHALL BE GIVEN TO THE GROUP OF SYMPTOMS?

By R. J. Noble, M.D.

(Read before the Medical Society of North Carolina at Oxford May 27th, 1890.)

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

I beg leave to report the symptoms arising during the treatment of an opium-eater for the cure of the habit. There has been a question in my mind as to what name should be given to the group of symptoms that arose in this case. If any member of the Society can enlighten me I would be glad to hear from him.

On the 8th of May, 1889, I was called to Mrs. W., who I found suffering with supra-orbital neuralgia. She requested me to give her a hypodermic injection of morphine, which I did, giving her ½ grain of morphine and 1-200 grain of sulphate of atropia. Two hours after I repeated the injection, as the other did not relieve her a particle. The second injection relieved her for some hours. She had bromidia and bromide potassium given her freely, also morphine hypodermically twice or three times a day until the 16th, when she was well enough to do without the morphine.

June 2d I was called again, when the same treatment was given her except that the morphine was given in doses of 1½ grains three times a day hypodermically. This was continued until the 15th of June, when only two doses of 1½ grains each were given, and, as he was so much better the next day, no more was given her. I had told her husband that she was an opium-eater, showing him the doses of morphine before giving them. He on her recovery from that attack asked her if she was not taking morphine, and, after a good deal of coaxing and argument, she admitted that she was, and had been for two or three years.

About the 1st of September he came to me telling me that his wife wished me to see her, that she would put herself in my hands and if I would not cut off the morphine too suddenly she would, with my help, quit the habit. I asked her how much she was taking

daily. Having no morphine she took some quinine and showed me about the size dose that she was taking, which I thought to be about 1½ grains three times a day. I weighed out 10 grains of morphine, put it in an ounce of water, telling her to take one teaspoonful three times a day. She took it in two days. I expected her to take it in eight days, but she filled the spoon as full as it could be filled, only getting six teaspoonfulls to the ounce, thereby taking 5 grains a day. I saw her often, and knew she was not taking her usual quantity. Her husband told me that as the time for her dose drew near she was nervous and was always anxious and ready for it.

The third day I put 8 grains in an ounce of water and told her not to fill the spoon so full, but she took it in two days. She was so nervous and complained so much of pain in her abdomen, especially in the left iliac region, that I gave the same on the fifth and sixth days. Though no better, I reduced the morphine on the seventh day to 7 grains to the ounce—dose as before. On the ninth day to 6 grains to the ounce. I now told her husband to get a graduated medicine glass so that she would get eight doses to the ounce instead of six, but the glass not being graduated correctly, he made ten doses to the ounce. She was now complaining of some pains in her arms, legs, abdomen, especially over the left ovary, and head. The room was darkened and everything kept quiet. Bromide of potassium was given her in doses of 60 to 80 grains every four hours. One and a half drachms of bromidia was given at bedtime with sometimes a dose during the day and injections of ½ grain of morphine three times a day soon got her straight again. On the twelfth day I put 6 grains in eight ounces of water, giving her one ounce at the dose. She was very nervous and restless, but said she must hold out to the end and not to give her any more than I was.

On the 20th of September diarrhœa set in with a return of the supra-orbital neuralgia. I gave her a few doses of paregoric and syrup of rhubarb, which controlled the diarrhœa. She continued taking ¾ of a grain of morphine three times a day for two weeks. Then I put 5 grains to the eight ounces, giving one ounce three times a day. Continued that until the 12th of October. I saw her two or three times a day, giving her all the encouragement I could to hold out to the end.

On the 12th of October she said she had slept but little the night

before, begged me for a little morphine, as the pains in her head and bowels were so severe that she thought they would kill her. She was now taking 1½ grains of morphine daily in three doses (½ grain each) per orem. I gave her ½ grain hypodermically, which quieted her for some three or four hours. My next injection was ⅝ of a grain. The third for the day was ½ grain, making a total of 1⅜ grains for the twenty-four hours, none being given by the mouth.

From the 12th to the 20th there was but little change in her condition; some days I would get down to 1 gr. others going back to 1½ grs. per day.

About the 21st she began to have hallucinations, and, although the walls of her room were perfectly white, she imagined they were checkered and striped; she could see ropes and threads crossing each other from different parts of the room. This I attributed to the effect of the cannabis indica in the bromidia which she had been taking freely—I suppose nearly, if not quite, half an ounce daily. So the bromidia was stopped and the following given instead:

℞.—Hydrate chloral..... ℈iv.
Potass. bromide..... ℈viij.
Morph. sulph..... gr. ij.
Aquæ..... ℥ ij.
M. Sig. One Dessert-spoonful as required.

This, with the injections of from 1 to 1½ grs. of morphine daily, was my treatment with little or no improvement until the 24th, her mind gradually getting worse, delirious all the time. Her temperature never went above 99½°, though her pulse went to 114. Her temperature was taken twice daily.

On the 24th Dr. J. B. Beckwith was called in consultation. He advised giving her 10-drop doses of tincture avenæ sativa three times a day and 1 drachm of bromide of sodium every four hours, increasing the doses 10 grs. every other dose until 2 drachms were taken, which I did. She was better on the 25th. She continued taking the regular doses of morphine.

On the 26th her bowels acted several times—she was naturally of a constipated habit. The morphine was given in ¼ and ½ gr. doses three times.

On the 27th her bowels acted ten or twelve times—large watery actions. Morphine given as on the 26th.

On the 28th her bowels were worse, acting every hour or two with considerable tenesmus. Morphine given as on the 26th.

At bedtime I gave a suppository of 1 gr. each of pulverized opium and plumbi acetas. There was no movement of her bowels until the next day. There was now steady improvement, though the quantity of morphine was not diminished any per orem. (None was given hypodermically); three doses of ½ gr. each being given. The hallucinations had almost stopped, mind clear, and she was a great deal stronger. She was well enough on the afternoon of November 1st to have a dress fitted; but on the night of November 1st the hallucinations were as bad as ever, she being unable to sleep more than one hour during the night.

I saw her early on the morning of the 2d. She was semi-delirious; pulse 86; temperature 99°; tongue slightly furred; severe pain in her head; could not bear the light; considerable subsultus; very restless; had great difficulty in swallowing; complained of dryness of her throat. During the day I only gave ¾ gr. of morphine hypodermically. Gave her two drop doses of tincture of aconite root every two hours. She could sleep but a few minutes at a time during the day or night. Found her condition worse in every respect on the morning of the 3d. I asked for counsel and Dr. P. E. Hines was telegraphed for, but did not come until the 4th.

She would lie still for an hour or more at times during the day, but she could not sleep. There was more difficulty in swallowing, she could not swallow half a teaspoonful of water without it strangling her; could not speak above a whisper, and not half the time could you understand what she was trying to say. I gave her only two doses of morphine during the day of ¼ grain each hypodermically. I gave her about one ounce of sweet milk during the day. The morphine kept her quiet. I mean by "kept her quiet" that it kept her from tossing and turning, which she did until I would give the injection of morphine, but the morphine did not stop the spasmodic jerking of the legs and arms or the constant subsultus and picking at the bedclothes. During the day her pulse was from 72 to 76 and her temperature in axilla 99°.

On the morning of the 4th I gave her ⅝ gr. of morphine as she was very restless, sleeping none, except from three to four, during

the night. Her general condition was worse, tongue with a heavy white fur and dry. I gave the morphine about 5 a. m.. After I gave the morphine she seemed to get worse, was seemingly in a comatose condition; could not speak at all, and did not speak again or try to speak until the morning of the 6th. I could put my finger on her eye without her noticing it; her pupils were dilated and did not contract on having a lighted match held before them.

Dr. Hines arrived at 11 a. m. He advised me to give small doses of morphine as required, with all the nourishment I could get her to take, as he thought her condition due to the withdrawal of the morphine and not to meningitis, as I feared.

I was called to a case of labor a 5 p. m., and not knowing when I would return, I gave her hypodermically ¼ gr. of morphine, not that she really needed it, but I thought she might need it before my return, and that ¼ gr. of morphine at 5 p. m. on the 4th was the last dose I gave her.

I returned about 12 p. m. Her condition was about as I left her, except that her bowels and bladder had acted involuntarily. I then began giving her 5-drop doses of tincture of belladonna every two hours.

I saw her early the next morning. All the difference I could see was that her eyes were sensitive to light and touch. I continued the tincture of belladonna in 5-drop doses for two or three days.

Her bowels acted several times during the day and at 6 p. m. I gave her 10 grs. of calomel by putting it on her tongue dry, and giving a little water afterwards, which acted freely.

On the morning of the 6th she whispered her husband's name. Although she knew what she wanted to do, she had no control of her bowels or bladder until the night of the 7th.

From the night of the 2d until the 6th it was almost impossible for her to swallow medicine or nourishment of any kind. We could only give her a few drops of milk or water every hour or two.

On the 8th her tongue was dry, red and cracked. I gave her 10 drops of aromatic sulphuric acid. The next morning it was moist and looked a great deal better.

On the 7th I began giving her the following at a dose three times a day :

℞.—Tr. nux. vom..... gtt. x.
Acid. phos. dil..... gtt. xx.
Syr. pruni., virgin..... ℥ ss.

Also the following, as required :

℞.—Tr. hyosciam..... ℥ ss.
Tr. lupulin..... ʒ i.
Potass. brom..... ʒ i.
Aquæ menth pip..... ℥ ss.

As she could now swallow we began to feed her with milk and water, beef tea, eggs (soft-boiled), and milk-toast. She improved steadily, not asking for, or getting, any morphine.

She tells me that she has not wanted or felt the need of morphine since her recovery; and I do not believe she has had any, as her husband has kept a strict watch over her.

She did not, apparently, lose any in weight while she was sick.

THE SANITARY ANALYSIS OF WATER.

By F. P. Venable, Ph.D., F.C.S., Professor Chemistry University of North Carolina and member of the N. C. Bd. of Health.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

I fear that this paper will seem rather a confession of ignorance and of inability to cope with the difficulties of the problem, on the part of the chemical profession, than one bringing to you instruction and aid. But I shall at least point out to you what are those difficulties and how great they are, and so make some excuse for our failure to meet them. Of course we have made some progress toward the solution of these questions, but the solutions are, as you will see, imperfect

I wish to speak of the subject with special reference to the water-supply of this State as being of most immediate interest to us.

We learn from the very instructive paper of Dr. Bahnson, the present President of our State Board of Health, delivered at the first Convention of the North Carolina Sanitary Association, that only ten of our cities and towns have systems of water-works in popular use. This leaves a great majority of our population dependent either upon springs or wells. Even in some of the towns boasting of water-works the supply is drawn from shallow wells.

At the risk of wearying you, I will repeat, in part, that which was said in the address just quoted about the possibility of pollution of such water-supplies. It is only by repetition that the lesson can be thoroughly learned, and you must learn it, if as physicians and sanitarians you would do your duty in this matter.

We must not look for such a thing as absolutely pure water, because this is unknown outside of the chemist's laboratory, and would neither be palatable nor wholesome if we could procure it for general use. All natural waters contain foreign matter, and there is therefore such a thing as a normal impurity. We class under this heading the oxygen, nitrogen and carbonic acid washed out of the air, and, in small amounts, certain of the commonest mineral matters dissolved from the earth. These we expect to find in all natural waters, as the rain and the surface-water have gotten

their materials from the air and soil. If either air or soil contain matter injurious to health, il is easily possible that the water can become noxious in its passage through them.

Leaving out of consideration the hurtful substances sometimes occurring in the air, it is evident that where the soil is impregnated with filth or decaying matter, the water flowing over it and seeping through it will become polluted. I well remember a summer spent in a small town whose water-supply came from springs at the foot of a hill upon whose sloping sides the cemetery was placed. So bad was the water that, in fifteen minutes after being drawn from the hydrant, it became too offensive to be left in the room. Was it surprising that, out of five of us, three had typhoid fever and the two not affected attributed their escape to precipitate flight?

Whether a spring or well-water, then, is pure, in the ordinary sense of the word, depends, first, upon the freedom of the surrounding soil from sources of corruption; and, secondly, the chances the soil and the water have of freeing themselves from pollution. It is safe to take as a rule that no soil in a thickly settled neighborhood is free from filth and decaying matter. With no system of drainage nor burning of garbage, with privies, pig-styes and stables huddled in among human dwellings, the ground becomes coated with a covering of organic refuse, and as this collects from year to year the soil may become saturated to a great depth. How close stables, privies, etc., may be to a well without contaminating its water depends upon the nature of the soil, whether sand, clay or rock, and upon the conformation or dip of the strata.

The soil has a certain power of freeing itself from these contaminating materials, being aided in this by the oxygen of the air, the roots of plants and certain organisms existing in the soil. The water is partially freed from these materials by filtering through the soil and the absorbed oxygen in it can also oxidize these matters partly, but the absorbed oxygen is soon used up, and even a great depth of soil can become impregnated with filth, and so far from acting as a filter to remove impurity, gives up pollution to fresh water. Of course a shallow well, with no great deph of soil for filtration, is easiest polluted, but the pollution of one much deeper is only a matter of time.

It needs no discussion in these days to convince one that impure water is unhealthy and that water polluted in certain ways can be

a conveyer of most dangerous diseases. A noteworthy proof of this was told me a few months ago by a former member of this Society. In a small city where a pure water-supply had been introduced some three years before, there had since occurred sixty-five cases of typhoid fever. Only three of these were in families using the pure-water-supply. The remainder made use of the old wells of the town, which should have been closed by law.

It is needless to multiply cases to prove that water can convey disease. The question rather is, What sort of impurity and how much must the water contain in order to cause disease? The chemist must decide these points when called upon to make a water analysis for sanitary purposes, and his task is a difficult one.

First, as to the kind of impurity which should be classed as dangerous to health. We would bring under this heading all dejecta of animals and decaying organic matter. Even if not absolutely dangerous in themselves, they form excellent media for the propagation of dangerous organisms, and it is the sanitarian's duty to avoid such conditions.

Dr. Mallet says in his Report to the National Board of Health: "If the theory be accepted, which has so much in its favor, attributing the production of disease by organic matter in drinking-water not to any specifically poisonous substance or substances, but to the presence and action of living organisms, it seems quite conceivable that a water containing organic matter of any kind, including vegetable matter, may be harmless at one time and harmful at another, when perhaps a different stage of fermentation or putrefactive change may have been entered upon, and special organisms may have made their appearance or entered upon a new phase of existence. Thus there might possibly be safety in drinking a peaty water, or water filtered through beds of dead forest leaves, when fresh; danger when, after a certain amount of atmospheric exposure, bacterial organisms had become developed; and safety again, perhaps, after the growth of such organisms had fallen off, and more or less of the available organic matter had been consumed."

That Dr. Emmerich drank dilute sewage for a number of days in succession and persuaded several of his patients also to do the same without ill-effect, is therefore by no means a proof that such water is not dangerous.

Our attention must be turned, then, to this other kind of organic

impurity, the organized, animate matter, low forms of life, organisms capable of causing specific disease. These consist also, of course, of organic matter, and are nourished by it. Organisms of some kind are present in all waters, and we must distinguish here, also, between the non-dangerous disease-producers or pathogenic.

It is towards this kind of impurity that attention is most directed of late. I think the aim of the chemical analysis is coming to be the answer of the question: "Is this water one containing the materials favorable for a flourishing growth of such organisms." And if the answer is affirmative, the water should be rejected because recent research has pointed out that these enemies to health are lurking for us in both air and soil. A recent note collating what is known on the subject appeared in the *Sanitary News* for May 3, 1890. It is stated that the superficial strata of the earth are extremely rich in pathogenic germs. A foot or two below the surface they cease to exist. Soil rich in organic matter is not favorable for their development. Causes of death of these pathogenic germs are first, exsiccation, the light of the sun and saprophytic bacilli. The walls of a well are a prolongation of the superficies, and are favorable to the life of the germs.

Water, then, in a favorable condition for the propagation of these germs, soaking through colonies of them, carries them on down into the well, where exsiccation is impossible, the solar light never comes and the sapraphytic bacilli are overworked.

I should include among the injurious impurities mineral matter in abnormal amount, but this is easily detected by chemical analysis, and need not be referred to again.

In an analysis of water for sanitary purposes, then, sewage and similar fermenting or decaying organic matter, are the things to be looked for. As to the amount of such impurity which may be present without prejudicing health, it is best to be on the safe side and reject all waters where even the slightest contamination is proven. It is right here that one of the main difficulties lies. The amounts to be determined are so exceedingly small that even our most refined methods of analysis sometimes fail us. In reporting such an analysis we give the amounts in 100,000 parts, but to be accurate they must be determined as parts in 1,000,000, and are frequently so reported.

While this exceedingly small amount of organic matter, often to

be found in dangerous waters, makes the analysis more difficult, it may be pointed out that it also militates against the theory that it is the organic matter itself which is noxious.

Dr. Mallet reports in regard to some of the samples of water analyzed under his direction in the course of his research for the National Board of Health: "If the whole of the organic carbon and nitrogen found in such waters as Nos. 35 and 36, of the highly dangerous character of which there can scarcely be a doubt, existed as strychnine, it would be necessary to drink about half a gallon of the water at once in order to swallow an average medicinal dose of the alkaloid. It is not easy to believe that ptomaines or any other chemical products of the putrefactive change, as yet observed, can possess an intensity of toxic power as very much greater than that of the most energetic of recognized poisons. A second difficulty lies in the ease and rapidity of change in the original organic matter. It is scarcely ever practicable to examine the water for the dejecta or other organic matter direct. We must know something of the products of the putrefactive changes and search for them. This means, of course, looking for the greatly smaller parts where the whole was so small as almost to elude us, and furthermore it means a great deal of inferential work, often of the most misleading nature. The products may have come from some comparatively harmless vegetable source, instead of dejecta.

The determination of the total organic matter present, by oxidation or combustion, which is done in all ordinary analyses, gives no reliable indication as to the sanitary condition of the water, and needs the confirmation of other tests. As the nitrogenous matter is the most dangerous, and more commonly animal than vegetable, the analysis is generally directed to the determination of the ammonia, or nitric acid, or nitrous acid resulting from its decomposition. In one of the methods the decomposing organic matter is made to yield its nitrogen, as ammonia, by boiling with an alkaline solution of potassium permanganate. Wancklyn rejects all water as dangerously impure that contains over 8 parts of such ammonia in 1,000,000 parts of water.

As nitrous acid can occur in the purest of water, it is difficult to fix a limit beyond which we can say that the water containing it has been contaminated. It is usual to say that in anything greater

than traces, it points to decomposing organic matter. In analyses it is reported as combined, hence under the heading of nitrites.

Nitric acid, present as nitrates, may occur in uncontaminated water up to 1.5 parts in the million, and hence it is only when it exceeds this amouns that it is regarded as a danger-signal.

As fœcal matter, and urine especially, contain common salt or sodium chloride, chemists carefully determine the chlorine in all drinking-waters, but the limit here cannot possibly be fixed as salt occurs in all soils, and even in the atmosphere. Two-thirds of the wells that I have examined in the small town in which I live are strongly impregnated with salt (using the word strongly in a chemist's sense), and I do not know whether I should refer it to sewage or the natural soil.

Time fails me to discuss the question how far these limits fixed by the chemist are justifiable, or, in general, how reliable these danger-signals are. It is a question over which chemists, individually and associated, are greatly worried at present. Certain it is that the number of errors made by analysts in their judging and condemning waters has brought discredit on the system in the popular mind.

There is one important adjunct to the chemical analysis which I must not fail to mention, and that is the microscopical examination. This applies not only to the sediment from the water, but to the water itself. Some suitable nourishing medium, as gelatine, is inoculated with a measured amount of the water and then exposed to a temperature favorable to the growth of the organisms. The number of "colonies" of organisms is then counted, and from that the relative richness of the water in such germs can be estimated. If this were all, it would be of little or no value. The examination must go further, and the microscopist must tell us whether these organisms are pathogenic or not. The purest water will in a short time absorb many different kinds of germs, on standing exposed to the air.

I have referred hitherto only to analyses which must be carried out by experts. Are there no tests which can be applied by the general public, the great uninitiated, to distinguish between good water and bad, between the pure and the dangerous? I earnestly wish that there were such tests, but as yet nothing sufficiently delicate to ensure absolute reliance is known.

We are not without entire approximate rough tests, however, which can greatly aid us. In the first place, we can make better use of the tests with which nature has provided us—the senses of sight, taste and smell. In some cases the senses of taste and smell exceed many times in delicacy the most sensitive of chemical tests.

The water that looks, tastes or smells foul, should be unhesitatingly rejected for drinking purposes. Of course by looking foul one does not mean a merely muddy water. I know a well-water that has been used with effective results, as far as the causing of sickness and fever is concerned, which, when held toward the light, revealed great squirming live things and smelled most abominally after a short standing. And yet that water was used, in spite of such evidence of its pollution. The owner seemed to distrust the evidence of his senses, and asked to have a chemical analysis made. Is it ignorance, or economy, or criminal carelessness that causes such folly?

There are waters which are dangerously impure and yet reveal this impurity neither to look, taste, nor smell. Sometimes we can still test such by the smell, concentrating the impurity by means of ether in the manner described a few months ago in the North Carolina Medical Journal, and then smelling the residue after the ether has evaporated. One can take a pure water and add to it urine in amount too small to be detected by the smell, and still detect it by the ether method. But even this test does not go far enough. And it is easy to surmise that there may be dangerous organic pollution without any smell at all.

There are tests, like the potassium permanganate test, and the silver nitrate test, which go still further in the detection of organic matter and which can be carried out by those without special training, but they are too indefinite in their interpretation to make it worth while to mention them here.

This is an important field of research for the sanitarian. To find an easy, simple, far-reaching, reliable test for dangerous pollution would be an invaluable discovery. I cannot say whether such a discovery is even possible or not.

As an addendum to this paper, giving some of the salient points of water analysis, it may be useful to mention two methods of purifying water dangerous or suspected of being dangerous. The first and simplest method is that of boiling. While boiling does

not remove the organic matter, it destroys the germs and all living organisms, so that the water becomes harmless and can be used without fear. This method, of course, does not free the water from any mineral matter contained in it, does not remove hardness nor suspended matter, and does not necessarily improve it in appearance. As there is loss of absorbed air the water will be somewhat less palatable than fresh water, having a stale taste. If the kettle or vessel used in boiling is not scrupulously clean it also will confer a foreign and unpleasant taste. These objections are not serious enough for one to think of risking his life with an impure water in preference to drinking it boiled, but they do interfere with the general use of boiled water where pollution is only suspected.

The second method of purification is by using alum. An old method and often used on the large scale, but not generally considered applicable on the small scale. It was only a year or so ago that Dr. Leeds discovered its peculiar efficacy in removing minute organisms. A method for using alum on a small scale has been elaborated by Dr. Austen, and was reported in the *Sanitary News* of March 8, 1890.

In the presence of the ordinary calcium bicarbonate of natural waters alum gives a gelatinous precipitate, entangling suspected matter and germs and allowing of their easy removal by filtration. A funnel can be found in nearly every household, or a cheap one can be gotten at the druggist's along with some cheap filtering paper, and the mode of using it is easily learned. The amount of alum need not, as a rule, exceed two grains to the gallon. The alum is best kept in a solution of such strength that a teaspoonful contains a grain. This solution can be made by dissolving 128 grs. of alum in a pint of water. "A gallon of water is placed in a clean tin pail and two teaspoonfuls of the alum solution are added. It is then well stirred and mixed with a clean tin dipper. It is best to keep the pail and dipper for this use alone. They should be kept scrupulously clean. After mixing, the water is allowed to stand five or ten minutes and is then poured on to the filter. The first half-pint should be rejected. One filter can be used for several gallons of water, but should then be thrown away. The funnel also must be kept clean." By a little mechanical ingenuity and arrangement of syphons the filtering can be made continuous and self-acting.

I make no mention of the many patent filters so highly recommended. Some are good, some bad and all dangerous when not properly watched and cleansed.

I cannot close without some reference to the dangers from impure ice. It is well known that freezing does not fully purify water and by no means destroys the organisms in it. Polluted ice is as dangerous as polluted water. Warning in this direction is especialy needed this year, as the past winter was too mild for the ice-crop to be gathered from the great rivers of the North with their free-flowing, comparatively pure water. The report is that the ditch, the pond and the marsh have been skimmed to even partially fill the the great storehouses. There may be some exaggeration in this, but there is danger. There is always danger where the lives of the community are left at the mercy of unscrupulous dealers.

I think the local Boards of Health of the State should make it their duty to enquire into the source of supply of water used in the many ice factories established and proposed, and insist on the best water being used; for unless such watchful care be exercised, these too can become effective agents in spreading disease.

ELECTRICITY IN THE TREATMENT OF WOMB DISEASES.

By H. O. Hyatt, M.D., Kinston.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.)

The last four years has witnessed great activity in the investigation of the natural and remedial properties of electricity, especially in its application to the cure of affections of the uterus and surrounding tissues. No time can be more fitting than the present to carefully review the work done in this field, to determine the value of the researches made by the slow, plodding man of science, and estimate the claims of the enthusiast who sees in every new remedy a cure-all.

We are aware that this safe and positive method of dealing with uterine disorders is making slow headway with the rank and file of the profession. We have not far to go to learn the cause. Years ago when the physics of electricity was little understood, members of the profession thought they saw in the supposed subtle fluid a grand remedy, one that was calculated to add new strength to wasted muscles and new vitality to weakened nerves. Doctors everywhere bought Franklinic machines and little whirly-gig arrangements that went by a crank. Thoroughly imbued with the idea that these wondrous machines were manufacturing double currents of electricity which were always running, jumping, skipping and hopping in opposite directions, would chase disease from the body and make the fortunate possessor of these curious shocking machines famous. The first few cases, especially if they were confiding, doctor-loving women, got well, as if touched by the hands of a magician. The doctor grew proud of his battery and invited the curious and venturesome to take hold of the handles and be shocked. "Bye and bye" the shocking machine grew to be an "old thing" in the neighborhood. The boys said they did not see how that thing could cure anybody, and the boys were right. The first few cases of cure were due to psychic influences entirely, or possibly once in a great while, of the multitude of divers diseases that were submitted to this treatment, a case was stumbled upon

that it suited, and a brilliant cure was the result. Such a case has fallen under our observation. About fifteen years ago the writer bought a Faradic battery and began the study of electricity in a desultory way. We did not get along very well with it. In only a few cases did we get any good result. Our battery soon got "out of fix" and was laid aside. A medical friend whose goodness of heart was only equalled by his ignorance of scientific medicine, took a fancy to the dilapidated old thing. We insisted on his accepting it as a present. He sent it to New York for repairs. He was the proudest man of his battery we ever saw. He carried it everywhere and used it for everything and on all occasions. In fact, we think he slept with it. Among the many cases that fell under the charge of the battery was a paralytic who had not been out of his house in fifteen years. He "mended fast," and in thirty days was in the swamps squirrel-shooting, very much to the disgust of his former medical attendants. My friend's reputation grew and in a short time he became a formidable competitor to the neighboring doctors, who were really well qualified men, and all on account of this one lucky hit. Fortunately for the community, he soon outgrew his suddenly acquired fame and had to remove elsewhere to get practice.

After a while the well-thinking and conscientious doctors grew skeptical of this curious and ill-understood novelty, and the machines were given over to the dust and cobwebs of the trumpery closet. We next hear of these appliances in the hands of the quacks, that grand army of enthusiastic frauds, who have taught the profession so many valuable lessons they have been slow to learn, such as movement cures, massage, etc., etc. It is only within the last few years and after the physics of electricity had been worked out by men unconnected with the medical profession, and instruments invented to measure the quantity and strength of the current, that the brain and energy of the profession has studied the physiolgical effects of electricity in a scientific manner. To-day we have, in the various forms of electricity, remedies, whose action is as well understood as a vast majority of those we have been using for centuries.

The doctrine of the correlation and conservation of energy or force, is so generally, or ought to be, so well understood by every one, that we will waste no time in attempting to show the manner in which force is always conserved and changed from one form to

another, as motion to heat, heat to electricity, electricity to light, and so on, but will enter at once upon the natural phenomena produced by electricity.

For medical purposes we rarely have use for any save Galvanic and Faradic electricity. These forms used to be designated as the continued and interrupted current. Faradic electricity is something more than interrupted electricity. The same quantity of electricity passing through a rapidly vibrating current-breaker does not produce the same physiological effect that the same amount would passing through an electrical coil, that is, wire wrapped around a magnet. In the latter case, if the current passed through what is known as the primary coil, its effects would be soothing. In the former it would produce a jerking sensation, or a rapid contraction of the muscles accompanied with distinct shocks, though in both cases the amount of electricity would be exactly the same. The difference in the physical condition of the current produces a difference in the physical effects. It has often been a source of amusement to see parties who owned Faradic batteries changing the current from the primary to the secondary and pulling out or lengthening the helix, imagining they were putting on more electricity, while in fact, they were losing all the remedial or beneficial effects of the current by changing its physical condition, and therefore subjecting the patient to the different physiological effects. While it may be amusing to a bystander to see patients squirm and shrink from the current, such proceedings stamps the doctor who resorts to such tricks to make an impression on his patients as a heartless fool. No man who understands disease and the physiological effect of the different currents, will ever resort to any such tricks, but will use whatever current will do the most good.

Galvanism being the variety of electricity most used in medicine, we will give some space to the discussion of its nature and the physical effects it produces on the body. Our chief source of galvanism is indirectly from chemical combination. Two different metals or bodies, generally pieces of zinc and carbon, are arranged to suitable fastenings, with a non-conducting substance between them, and immersed in a chemical solution. The chemical will attack the metal it has the most affinity for and form a new compound, but the process will take place slowly, so long as the two bodies called electrolytes are kept apart, and there will be no

electricity generated, or rather liberated; we use the term liberated advisedly, because the force we know as electricity already existed in the elements and chemical fluid in the form of latent heat, and is liberated or turned loose in the condition of electricity. As soon as the wires extending from the elements are brought in contact we have what is known as a circuit formed, which affords the liberated electricity a means of escape, and by chemical action the battery fluid takes hold or eats away the elements more rapidly. Chemical combination liberates a force which is converted into electricity, unless the electricity was stored up in the elements as heat is when it is said to be latent, which in its turn undergoes a change and is dissipated in the surrounding atmosphere as heat or motion, and so on; never being destroyed, but constantly changing its physical condition. Electricity is liberated by chemical combination, and when passed through a body containing salts and acids in solution will cause them to break up, the salts going to the negative pole and the acids to the positive. We thus see a force started by chemical combination producing chemical decomposition. It is this chemical decomposition that concerns us in the study of the curative action of galvanism. A familiar experiment to demonstrate this fact is made by putting the poles or handles of the battery on different sides of the cheek. The side on which the negative pole is placed will taste salt, the other side acid. At a noted and very prosperous quack establishment in Pennsylvania I am informed they are in the habit of playing upon the credulity of patients by doing that simple experiment and telling the patients that they give a different and stronger electricity than other doctors can, and it will do them more good.

In the application of galvanism to the tissues the first laws of Faraday should be specially borne in mind.

First Law.—The decomposing force or chemical power will be the same in all parts of the circuit.

The chemical decomposing power of galvanism does not seem to be all that is concerned in the resolution of the diseased tissue compounds. The collection of the acid and alkaline constituents of the tissue at the positive and negative poles, respectively, is no doubt due as much to electrical osmosis as to chemical decomposition. Is all the electrical energy expended in this way? We venture to say it evidently is not. The tissues offer great resistance to

the passage of electricity, as electricity. Other bodies offer great resistance. The familiar example of the galvanic cautery and the Edison electrical light are such in which it is demonstrated to the most careless observer that the electrical energy, which, like all other forms of energy, is as indestructible as matter, is transformed by the peculiar physical properties into motion, which in its turn from the rapid vibrating movements so induced is transformed into heat, and if the original electrical energy is sufficiently strong, the loop is soon in a state of incandescence. If we should admit that that part of the electricity is correlated into, and dissipated through, the body as heat, we still have the liberated latent energy of the tissue compounds which has been liberated by the catalytic action of the current as an unaccounted for factor in the process. Are we warranted by *a priori* reasoning, or would it be an unwarrantable stretch of the imagination to assume that this liberated latent energy, instead of being dissipated as heat or some useless form of energy was correlated into vital energy and afforded sufficient dynamic power to raise the imperfectly developed cell of diseased tissue to the well-developed cell of normal tissue, and in this way acted as a curative or remedial agent? Whether we accept this theory to account for the physical changes produced by galvanism or adopt some other, the fact that galvanism will produce absorption and change in abnormal tissue remains the same.

Apostoli, of Paris, and Engleman, of St. Louis, are the champions of the new treatment of uterine tumors with currents of great strength. By means of the current-measurer or galvanometer, we are enabled to measure the exact quantity of electricity passing through a body and can by this means measure the dosage as accurately as we could weigh it in grains, if it were a ponderable material. Formerly the quantity was measured by the number of cells in the battery and was very fallacious, because when the battery fluid was fresh the current was stronger, and when applied to the dry skin the amount of resistance was so great that only a small amount could pass into the body. By the use of the galvanometer we can measure the exact quantity and ascertain the exact amount passing within a given time, and by this means learn a great deal more about the dosage and scientific use of this most potent remedy.

Apostoli, Engleman and others use from 150 to 250 milliampéres

to reduce fibroid tumors of the womb. Under ordinary circumstances currents of this strength cannot be borne on account of the extreme pain induced thereby. In fact, some go so far as to recommend that the patient be put under chloroform so as to enable them to stand the current. Apostoli recommends that the abdomen be coated with the sculptor's clay so as to dissipate the current over a great part of the body's surface, and thereby lessen the pain. This does not appear to be a wise or scientific method. The fibroid is what we are trying to cure and not the whole abdomen. As the decomposing power will be the same in all parts of the current what can we expect to gain by subjecting so large a surface of healthy abdominal tissue to the decomposing influence of the current.

Neither the enthusiasm of Engleman nor the egotistical fiat of Apostoli can change the operation of a physical law. It may in some quarters be considered as heresy to say so, nevertheless we do think that this method of using electricity, even if it is sanctioned by great names, is inhuman and barbarous. It is the quantity of electricity that passes through a tumor or part of the body that exercises a curative effect, and not the rapidity with which a given quantity can be passed. As much electricity as 5 milliampéres strength can traverse the tissues in twenty-five minutes time as can in one minute at 125 ampéres strength. The weak current continued for a long time gives the patient no pain or inconvenience.

We will admit that covering the abdomen with potter's clay will enable us to pass more electricity into the body than we otherwise could, but it does not the least bit alleviate the pain at the negative pole or needle which is inserted into the tumor. We have tried it and know whereof we speak. We fail to see any use of spreading electricity all over the abdomen when we are trying to get the benefit of its action on a tumor that generally does not fill one-tenth of the abdominal cavity.

Electricity is not a harmless remedy. If its good effects are due to its chemical effect upon the constituents of diseased tissue, why should we submit any more of the healthy tissue to its action than we can possibly help? Certainly no good can come from such a procedure. Were it not that the conservative laws of Nature were too strong to be interfered with by the iron-headed stupidity of ambitious doctors, the profligate use of galvanism would unbalance

the vito-chemical laws of healthy nutrition and leave the confiding patient in a bad condition.

We do not mean a wholesale denunciation of the advocates of currents of great strength. Many of them are carried away by the results obtained by the use of galvanism and never stop to inquire if there is not a better way to do it. While we think the method is unscientific as well as unmerciful, the electrical enthusiast has by his ingenuity given us many useful appliances for which we hope we are duly thankful. Indeed, we sometimes think that if it were not for the professional Sangrados the march of scientific progress would be slower than it is. The discursive medical genius is always ready and anxious to leave beaten paths and explore untrodden and unknown fields hunting for gems whose purity and worth are to be determined by the slow-plodding and doubting Thomas, who, if something new or useful is really found, awards him merit and writes his name in the temple of fame. Otherwise they write him down as an ass, and after a fitful season he passes into everlasting oblivion.

The method we usually resort to in the treatment of fibroid tumors of the womb is to pass a needle insulated to near the point through the vagina into the tumor with a moderately-sized sponge electrode on the abdomen and over the tumor, using a current of from 5 to 10 milliampéres from thirty minutes to one hour. We have had cases on hand undergoing the galvanic and ergot treatment at the same time, and with the combined treatment of ergot and galvanism, and we incline to the belief that the latter is the best, though in all cases we were enabled to arrest the growth of the tumor and put the patient in a more comfortable condition. We have during the last twenty years seen and treated a good many uterine fibroids and have not found them so difficult to manage as the text-books would lead one to suppose. It is in other womb troubles that electricity in our hands has been of such signal benefit.

Mrs. T., a blonde, aged 25, came to us suffering with a bearing-down sensation in region of womb, pain in the lower part of abdomen, pain in back and feeling of general lassitude, menstruation normal as to time and quantity, but very painful, compelling her to go to bed and take an opiate. Examination: womb in proper position, canal very small, almost closed. Previously she had been

under the care of one of the most distinguished medical men in the State, who had attempted to overcome the trouble by dilating the uterine canal. He succeeded in giving only temporary relief, when the dilatation was made just before menstruation. The trouble in that case was narrowness of the uterine canal, which prevented the free escape of the menstrual blood. Dilatation had been tried and failed, and before we resorted to splitting up the canal determined to use galvanism. Attaching a good-sized uterine electrode to the negative pole of the battery and using a current of 8 milliampéres strength we placed the electrode to the mouth of the womb and by gentle pressure had the satisfaction of seeing the instrument pass into the uterine canal. The redundant tissues of the canal, so to speak, melting down in front of the instrument. The operation was done without pain or hemorrhage, and was repeated once and followed by a permanent cure. This case is one of many of painful menstruation we have relieved by this method.

The following is an illustrative case of the beneficial effects of electricity in a very painful and annoying class of diseases :

Mrs. L. came to me from a neighboring town saying she had run the gauntlet of all the doctors. Every June and September, to use her own expression, she was knocked over and had to go to bed for a month or more. Symptoms: pain in back over region of lower abdomen, troublesome urination, defacation, if not painful, very disagreeable, bowels costive, leucorrhœa, menstruation painful and abundant, general health otherwise good. Examination: uterus in proper position, larger than normal, canal open and free. Around about the body and the whole upper floor of the pelvis there was a feeling of puffiness and thickening of all the tissues; considerable tenderness in region of the ovaries. The case was one of chronic pelvic cellulitis, a disease that may remain comparatively quiescent for a while, to be lighted up at the slightest imprudence on the part of the patient, such as getting the feet damp, or cold, or changing flannels for summer wear. Indeed, the most exciting cause of this trouble is getting the feet wet and cold or during menstruation. One attack predisposes to another until after many successive attacks the unfortunate patient has the ovaries bound down by inflammatory action or has a pelvic abscess and has to face the surgeon's knife before she can hope for a radical cure. This class of cases is very trying to both patient and doctor, but fortunately we have in

the galvanic current a remedy when properly applied that will rarely disappoint us. We knew that the ordinary routine treatment would not cure her; she had already been submitted to that by careful and painstaking doctors. We at once put her on galvanism current of 5 milliampéres strength continued for thirty minutes every other day. A few weeks treatment resulted in a cure which has remained permanent. Without galvanism this lady would probably have been compelled to submit to an operation for removal of the ovaries.

Amenorrhœa and insufficient flow has in our hands responded to the faradic current after other means had failed. We do not claim for electricity that it is a cure-all, or that it will cure the majority of uterine disorders, but that there are troubles which do not yield to other remedies as to this agent.

A young friend suggests that we should say something about how to learn the proper way to manage electricity. By all means learn something about it. We would recommend the careful study of "The Correlation and Conservation of Energy," by Youman; "Dechanel's Natural Philosophy," by Amory; "Electrology," by Ranney; "Electricity," by Erb, etc.

In conclusion, we will say that the ownership of an electrical outfit does not constitute a doctor a practical electrician, any more than the ownership of a telescope would make one an astronomer. If you don't intend to master the technique of the science let it alone and send your patients to some one who has done so. A slip-shod, half-handed way of doing a thing brings the method into disrepute and reflects discredit upon the faculty.

ELECTRICITY IN GYNÆCOLOGY.

By J. W. Long, M.D., Randleman.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

In this paper no attempt will be made to define simply the progress made in this department during the past year, but to present in as clear and concise a manner as possible the status of electricity in gynæcology as we find it to-day.

Two forms of the electric current will be considered :

Galvanism, by which is meant a constant, uninterrupted, smooth-flowing current, and

Faradism, or the interrupted current.

Even a superficial knowledge of electro-therapeutics will convince us of the wide difference in the indications for these two forms of electricity. The respective indications will become apparent as we discuss their application to the several conditions to be considered as follows :

Galvanism in Uterine Fibroids.—It has been only a few years (in 1887) (McGinnis, Electricity in Gynæcology, p. 28) since Apostoli astonished the world with statements of his marvelous success in treating uterine fibroids with very large doses of the continuous current.

At first practical men were inclined to doubt these assertions, believing Apostoli to be an enthusiast and electricity as applied by him to this and other affections to be a kind of "cure-all"—not worthy of serious consideration. But the champion of electricity continued to sound its praises till thoughtful men decided to not only test its merits, but to go to see Apostoli and study in his clinic the application and effects of this wonderful agent. I have read the reports of many physicians and surgeons who have thus visited Apostoli, and have yet to see it stated by any of these gentlemen that Apostoli has ever made any false representations as to the effects of electricity in his hands; however much others may have been disappointed in its use, all must admit this eminent experimenter to be careful, painstaking and honest ! As a matter of fact, Apostoli does not claim to absolutely cure, i. e., *remove*, (Reamy,

Gyn. Tras. 14, p. 126) any case of uterine fibroid with electricity. Some of his followers do claim a small per cent. of absolute cures. (Martin, Elec. in Gyn., p. 64; Hall, *Amer. Jour. Obstetrics*, Dec., 1889, p. 1,255.) What Apostoli does claim, and it is one of the prominent merits of the method, is a very large per cent. of *symptomatic* cures—the tumor shrinks from one-half to two-thirds, thus relieving the *pressure* symptoms, while the *hemorrhage* and *neuralgia* also cease. Dr. Franklin H. Martin (Elec. in Gyn., p. 64), of Chicago, who has made a special study of Apostoli's method, reports from his own experience of 200 cases, 84 per cent., symptomatically cured, with an additional per cent. of actual cures. About 15 cases are still under treatment. Only 3 cases that continued treatment failed to find relief. He has had no death. Apostoli has treated several hundred cases with but two deaths, which he candidly says were due to avoidable causes and should not be attributed to the method. In citing these favorable statistics I am not unmindful of the many unfavorable reports that we are constantly hearing through medical societies, and often from men of acknowledged ability. But these failures by no means prove that Apostoli is wrong. In using any therapeutic agent, even after a correct diagnosis is made, there are many things to be considered.

Dr. Hall (*Amer. Jour. Obstetrics*, Dec., 1889, p. 1,255), who spent several months in Apostoli's clinic last year, says: "His success would seem to be due to attention to all details, rigid antisepsis and careful adaptation of the kind and amount of electricity to the strength and condition of the patient."

The apparatus required in this treatment are:

1. Any battery that will give a continuous, smooth-flowing current to the amount of 250 to 500 milliampéres.

2. An appliance by which the current may be gradually and without interruption increased from zero to the maximum, and turned off in the same manner. Dr. A. Lapthorn Smith says he is convinced that the *Bailey Rheostat* (made by the Law Telephone Company, Liberty street, N. Y.) is the best instrument for this purpose.

3. A *galvanometer* that will register accurately 500 milliampéres. Gaiffe's instrument made in Paris (40 Rue street, Andrew de Arts) is preferable to any on the market. (A Year's Experience with Apostoli's Method.—*A. Lapthorn Smith.*

4. A *large abdominal electrode.* It may be Apostoli's potter's clay, or Martin's metal dish filled with water and covered with animal membrane, or Engleman's absorbent cotton sewed to tin-foil, or Smith's combination of Apostoli's clay in Martin's dish—the point is to distribute the point of contact of the electrode over a very large area, by which means the large doses of electricity are borne. Dr. A. H. Goelet recently exhibited to the New York Obstetrical Society an electrode made of potter's clay of the consistency of putty, with zinc on top of it, the whole covered with absorbent cotton and sewed up in linen, the back being finally covered with rubber. It remains moist for a month. (*Amer. Jour. Obstetrics*, March, 1890, p. 323.)

5. *Intra-uterine* electrodes. When the *negative* pole is used in the uterus an ordinary uterine sound with a hole in the handle to fasten the wire from the battery to will answer every purpose. When the *positive* pole is to be applied to the uterus we must have an electrode insulated to near its end and the exposed tip be plated with platinum or gold. Dr. Goelet has devised a steel electrode which is much cheaper than those mentioned. Apostoli has carbon-tipped electrodes of different sizes. It has been shown that to cauterize the mucus membranes of the uterus a current of 25 milli-amperes was necessary for each square centimetre of surface. (Electricity in Gynæcology, p. 65.) Now, when the positive pole is used for its cauterizing effects, by having electrodes of known size, 4 square centimetres, we know that it is necessary to use just 25 milliampéres to each square centimetre, or in this instance 100 milliamperes. Apostoli also employs a substance called *gelosine*, which is injected into the womb, and some metal substance made to convey the current into the mold of the gelosine which fills accurately every part of the uterine cavity.

6. For *galvano-puncture* in the posterior or lateral *cul-de-sac* (they should never be made elsewhere) a delicate steel needle or trocar, protected by a celluloid sheath or canula is employed.

Dosage.—Many have objected to the treatment because of supposed high doses. As a matter of fact, the method stipulates no standard dose, but the number of m. employed is carefully graded to suit each individual patient. The point is to use as high a current as the patient can tolerate without too much sufficiency. The large clay abdominal electrodes make possible currents of from 100

to 500 m.; 200 to 300 m. is as high a current as is usually borne, while many cannot bear more than 75 to 125 m. A limited number (Electricity in Gynæcology, p. 64; A Year's Experience with Apostoli's Method, A. L. Smith, p. 11) of cases have to be moderately chloroformed to use even minimum doses. Usually a tolerance is rapidly established and the dose is increased at each séance as the patient can bear it. The method consists in attaching the positive pole to the abdominal electrode and the negative to the intra-uterine sound. The galvanometer being interposed, the current is gradually turned on, very mildly at first, increasing the strength cautiously. The application usually lasts five minutes, when the current is turned off gradually, taking great care not to break the current, for this would produce a very disagreeable, if not dangerous, shock. The séances are repeated at intervals of two to five days. There are many points connected with the treatment that cannot be emphasized in a paper of this character—as the antiseptic details, rest after the application, etc.

When the tumor is situated in the posterior uterine wall and the anterior wall becomes thinned from absorption, Dr. A. Lapthorn Smith puts the clay electrode on the back, for the reason that the current always takes the nearest route from electrode to electrode, and by this means the tumor is put in the direct track of the current.

If the tumor is of the *bleeding* variety, the *positive* pole is attached to the intra-uterine electrode. *Acids* always collect at the positive pole (making it hæmostatic), and if a current of 25 m. for each square centimétre of the intra-uterine electrode are used, the mucus membrane will in five minutes be so effectually cauterized as to prevent all further hemorrhage. (McGinnis, Electricity in Gynæcology.) When the uterine canal is large and tortuous and electrode with a flexible stem should be employed, and successive portions of the membrane cauterized at each sitting. When the intra-uterine method fails to reduce the tumor and relieve the symptoms satisfactorily, the galvano-puncture is resorted to, though this plan is not to be used indiscriminately. A point is selected in the posterior *cul-de-sac* free from pulsation, a small celluloid tube is placed against this spot and through the tube a very small trocar-electrode is pushed into the tissues not exceeding one or two (Hall says never more than $\frac{1}{2}$ centimétre loc. cit.) centimétres. (A cen-

timétre is = ,393 inch.) The clay electrode being on the abdomen as before, the current is gradually turned on and off as when the intra-uterine plan is followed. From 50 to 175 m. are about the limits of galvano-puncture. The negative pole is attached to the trocar except in cases of bleeding fibroid, or where the patient is of an hysterical temperament, or where the negative punctures are very painful—in these cases the positive puncture is better. Strict antisepsis and rest in bed for two days are always imperative in galvano-puncture.

I cannot better close this part of the subject than by quoting the words of Thomas Keith, whose results in hysterotomy are the best yet attained—"results that Dr. Playfair is pleased to call almost phenomenal." Keith says (*Brit. Med. Jour.*, June 8th, 1889): "What I now plead for is, that for a time all bloody operations for the treatment of uterine fibroids should cease, and that Apostoli's treatment, *as practised by him*, should have a fair trial." * * * "Hysterotomy, which is performed every day for a disease that rarely of itself shortens life, kills every fourth or fifth woman who is subjected to it. This mortality must cease; it is not a question of surgery, it is a question of humanity. Every time that any disease can be cured without resorting to a bloody and dangerous operation, such as hysterotomy, progress is made in an art, and there is a gain to humanity, while surgery is the better for being purged of a deadly operation."

I am glad to add that the method is having a trial, and, while rejected by such able men as Chadwick, of Boston, and (partially so) by Mundé, of New York, it is giving the most gratifying results in the hands of Smith, of Montreal, Martin, of Chicago, McGinnis, of New York, and many others. The tumor shrinks, the hemorrhage ceases, the neuralgia is relieved, constipation is overcome, the patient eats and sleeps better—in a word, the patient seems to have taken a new lease on life, or should I say a new life on the old lease?

The next most important application of galvanism is in *pelvic exudations*. Martin (Electricity in Gynæcology, p. 61) has a vaginal electrode ending in an exposed metal ball, which is thickly covered with absorbent cotton moistened with water, the cotton held in place by a little rubber band. The negative pole being attached to this electrode and the clay on the abdomen, the ball is

pressed firmly against the exudate in the vagina. The point is to engage the mass of exudate between the electrodes, and sometimes this can be done better by using an intra-uterine electrode. An exudate will yield more quickly to galvano-puncture (Hall, loc. cit.), but the pain is greater and often chloroform is required. The *negative* pole is usually applied internally in treating exudates, for the reason that the *alkalies* collect at this pole, which accounts for its power to dissolve such deposits. Goelet (*N. Y. Med. Journal*, June 8th, 1890, p. 621) applies the *positive* pole in the vagina at first (afterwards the negative) in all cases that are associated with much pain, because the positive pole is more *sedative*. The dosage in this affection ranges from 75 to 125 m.; turned on and off in the same cautious manner as when treating fibroids. All acute inflammation should have disappeared before beginning the treatment. Martin (Loc. cit.) makes the unqualified statement that any case of exudate from simple thickening of the broad ligaments to complete fixation of all the pelvic organs with an unyielding exudation—may be relieved by a persistent course of galvanism. This assertion is amply sustained by other men of wide experience.

All subacute and chronic inflammatory conditions of the uterus and appendages are relieved by galvanism. Laparotomists who operate for diseased tubes and ovaries claim that the *pain*, which is *the* symptom demanding the operation, is caused by *adhesions*. Now, there is no doubt about galvanism loosening up these adhesions by dissolving the exudate that forms them, thus relieving one of the leading sources of suffering.

We now come to the subject of *galvano-puncture* for *cystic tumors* of the pelvis connected with the uterus, including *hydro-* and *pyo-salpinx*.

This operation has its most able champion in this country—Dr. Augustin H. Goelet, of New York City. In a recent article (Electricity in Gynæcology, p. 11) Dr. Goelet says: "The addition to our resources of the antiseptic power of the galvanic current renders puncture and aspiration by the vagina harmless, when the condition is appropriate and the degree of penetration is limited." He quotes Dr. Bigelow, who, writing from Paris, says: "In the French Academy of Medicine they are discussing methods of drainage by uterus and vagina without the necessity of operating, so that the minds of surgeons themselves are turned in conservative

directions. I am sure that the time is in the near future when electricity shall solve the riddle." The method is applicable only in such tumors as are easily accessible from the vagina or may be influenced by the chemical effects of galvanism applied to the endometrium. A very fine canula, about the size of No. 4, French scale, and a steel trocar so adjusted that it can penetrate only a known distance—seldom should it exceed 1 centimétre—are needed in this operation. After thoroughly irrigating the vagina the canula is passed along one finger in the vagina and held against the point selected for puncture; the trocar is then pushed in and withdrawn from the canula; if fluid does not flow the canula without the trocar is pushed in a little farther. An aspirator may be attached to draw off the fluid. After the fluid is evacuated the trocar is partially reintroduced and attached to the negative pole. The clay electrode being on the abdomen, the current is gradually turned on to not more than 50 m. for five minutes. If pyo-salpinx is found, the cavity is washed out with an antiseptic solution and the *positive* pole is used because less irritating and more antiseptic. The track of the puncture is thus cauterized, shutting off septic matter from being absorbed. The galvano-puncture may or may not be repeated after the puncture, as the case demands. The puncture is followed by repeated *negative* applications. Pyo-salpinx may sometimes be relieved—the tube evacuated—by applying a carbon- or platinum-tipped electrode in the uterine cavity, the positive pole being attached.

Bloody tumors of the pelvis (hæmatosalpinx, hæmatoma and hæmatocele) are treated *first* with *positive* intra-vaginal applications till the clot is firmly formed, followed by the aspirator to remove the separated serum and *negative* puncture to cause absorption.

For all *bleeding conditions of the endometrium* there is no better, safer and cleanlier treatment than *positive* cauterization.

Dr. Mussey, of Philadelphia, says: "In *simple endometritis* or *uterine catarrh*, galvanic currents, locally applied, are practically infallible. I have never seen a case resist them. The current need not exceed 10 to 35 m." (Electricity in Gynæcology, p. 71.) If *menorrhagia* exists the *positive* pole is used in the uterus for its styptic cauterizing effects, otherwise the negative.

In *stenosis of the os or cervix*, the well-known dissolving and dilating effects of the *negative* pole are all that can be desired. If

this condition co-exist with menorrhagia, the negative dilatation of the cervix should be followed by positive cauterization of the fundus.

Bi-polar Faradization.—This is used in two forms—with the *coarse wire*, or current of *quantity*, and the *fine wire*, or current of *tension*. The bi-polar electrodes have both poles terminating in one electrode, separated by an inch or so of non-conducting substance, so that when applied the current must traverse the tissues to get from one electrode to another. The current of quantity is essentially a *tonic* and deserves high rank among this class of resources, especially as it can be applied locally and with the expectation of getting *certain* results. It is indicated in any case of pelvic trouble where there is *relaxation of muscular tissue*, either chronic or acute, e. g., in post-partum hemorrhage, no matter how much the uterus is exhausted, it will certainly contract on applying the coarse wire current in the uterus.

Dr. A. L. Lapthorn Smith (Electricity in Gynæcology, p. 47) has summarized the indications for the fine wire current of tension as follows :

1. *Ovarian pain* (*Amer. Jour. Obst.*, April, 1890, p. 441), where no organic disease can be found. The séance lasts till the pain is gone—10 to 30 minutes. After a few hours the pain returns, but next day (the applications should be made often) it stays away longer, when finally it is permanently relieved after rarely more than 10 sittings.

2. In cases of *abdominal pain due to hysteria.* These are the cases Apostoli has been accused of curing by hypnotism.

3. *Fleshy women* about the age of 30, who *menstruate scantily*, and whose uteri are not well developed. Three intra-uterine applications a week developes the uterus, establishes the flow and relieves this class of patients immensely.

4. In *vaginismus* this treatment is very effective. The condition is due to hyperæsthesia of the terminal nerves, which may be readily overcome by the current of tension.

In *extra-uterine pregnancy* a careful review of the literature of the much-vexed question of treatment leads one to the following conclusions :

1. That nature is capable of *absorbing* the fœtus and its membranes *up to the end of the fourth month.*

2. That the *interrupted current* (faradism) *readily destroys fœtal life* without *in any way* endangering the mother, no rupture (Palmer, *Amer. Jour. Obst.* February, 1890, p. 218) ever having been caused by it, or other accident, when properly applied. The faradic should be followed by the galvanic current to hasten absorption.

3. This plan (electricity) should be followed in all cases *prior to the close of the fourth month*, the current being applied according to the sensations of the patient.

4. In *rupture and clearly threatened rupture*, laparotomy should give place to electricity even before the end of the fourth month.

5. After this period and *before viability*, electricity should be used, followed after a time by laparotomy.

6. *After viability* the child should have a chance and electricity should not be employed.

FIBROID TUMORS OF THE UTERUS.

W. P. Whittington, M.D., Asheville, N. C.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

In presenting this subject to the Society I do so fully aware of the fact that there is to-day a great revolution taking place in the medical world in reference to the pathology, etiology, but more especially the treatment, of uterine fibroids. It is doubtless true that, aside from the catarrhal and other deeper inflammations of the mucous membrane and surrounding tissues, fibroid tumors are by far the most common cause of suffering arising from the uterus.

It is estimated by good authority (Bayle and others) that at least 20 per cent. of all women dying beyond 50 years are affected with uterine fibroids. Some authors give a larger per cent., some a smaller. Recognizing that at least a large number of women who live to be 35 years of age are affected with fibroids, I must conclude that, as a whole, they are not altogether as dangerous as some of the more serious conditions arising from their presence in the uterus indicate. Yet, remembering that distressing and dangerous conditions do arise, I am impressed with the importance of every practitioner (whether a practical gynæcologist or not) making himself familiar with all these conditions as well as the means of getting rid of the cause, or at least preventing the serious effects arising therefrom, by the most certain and least dangerous means.

In considering the pathology and etiology of fibromata, we find ourselves lost in a mist of uncertainty and difference of opinion. Some writers will tell you that the cause is totally unknown, and that the pathology depends on a peculiar development of a changed uterine tissue with proliferation of cells in such a manner as to produce an independent growth. The most reasonable theory (to my mind) is that advanced by Rosa Engart, which she substantiates by referring to some of the late researches by Welch. Her theory is that a fibroid is nothing more nor less than an organized giant thrombus. Wherever hæmatoma happens to form nature will try to bring life into the extravasated blood coagula by organization.

Welch states that in a thrombus of five minutes existence blood-corpuscles were found, but in a state of degeneration. Leucocytes

were only sparingly visible. Half an hour later they had increased considerably in number. Fibrine appeared in from five to thirty minutes in the form of strips and islets between the blood-corpuscles and on the surface of the blood coagula. Gradually it formed a network, and twenty-four hours from the beginning of the process a great part of the thrombus consisted of fibrin.

Henking holds that the first process in the organization of a thrombus is the conversion of the blood into a fine granular mass which becomes striated. Canalization takes place from the line of demarcation from the border of the vessel-wall; proliferation of the endothelium begins and gradually covers the part of the thrombus which does not adhere to the surrounding wall. Underneath this cover a layer of connective tissue develops; the endothelium begins to grow into the thrombus and capillaries are formed. Another set of capillaries develop from the vasa vasorum of the vessel in that particular thrombus which adheres to the vessel-wall. Gradually the connective tissue increases while the thrombus decreases.

The structure of fibroids varies very greatly according to their original development and their state of health or disease. They are composed mostly of connective tissue, but there is always a certain amount of muscular fibres developed in their formation. There are also two distinct classes of myoma or fibroid. One is a soft, smooth, rapidly growing myoma and may occur at any age and require operation in early life, while the other is a multinodular, firmer growth, and rarely, if ever, calls for removal before the thirtieth year. Removal of the appendages will usually stop the growth and reduce the size of the multinodular, while it will have no effect on the other. Hence we see the importance of a correct diagnosis, which is not at all times possible, and accounts for many of the failures of treatment and the consequent condemnation, either of the method used, or its application. To the œdema inflammation, fatty colloid and calcareous degeneration I will only refer as some of the diseased conditions to which fibroids are liable, and as having nothing to do with their true pathology. The most common site of fibroids is in the body or fundus, but they may develop in the cervix. They are either sub-mucous, interstitial or sub-peritoneal according to their situation in the uterine wall. Of these the sub-mucous is probably the most fruitful of hemorrhage,

while the sub-peritoneal is more apt to involve the appendages and produce neuralgic and other symptoms due to pressure upon the pelvic and abdominal viscera. Pain and other distressing symptoms may be caused by degeneration, sepsis and other complications, and must not be attributed merely to the displacements usually found accompanying uterine fibroids.

Those tumors which produce the most serious and annoying symptoms are of rapid growth, or involve the endometrium or appendages. Very small tumors may delay the menopause, but are not beyond this of much importance in women at this period of life. Pain and failing health taking place about this time of life, is an indication of degeneration and may call for hysterectomy.

I will not occupy your time further to discuss the causes, complications, symptoms and differentiation, but will proceed to the medical, electrical and surgical treatment. By medical treatment we may expect to relieve the pain, reduce the hemorrhage, and reduce a sub-mucous tumor into one of a polypoid nature, and thus favor surgical interference. This is no doubt best effected by the careful and continued use of ergot in one form or another. We may also hope, by the use of the same drug, to so contract the tumor and surrounding tissues as to reduce or destroy the nutrition, and thus retard, or entirely stop, the growth of the tumor. Besides ergot, such remedies as favor absorption, as the iodides and bromide of potassium; preparations of arsenic and phosphorus, are recommended; but it is not known that they will certainly produce absorption of these tumors.

Dr. Bedford Brown speaks very highly of the calcic phosphites, claiming that they favor the absorption of tissues of low vitality by building up and correcting the tone and vitality of the normal tissues. Such remedies must necessarily require a considerable length of time, and are therefore applicable to such cases as do not require immediate active treatment.

The use of electricity in the treatment of uterine fibroids has been attracting considerable attention for the last few years, and will no doubt be the means of at least putting a check to the enthusiastic use of the knife by many gynæcologists of the present day. Don't understand me to wholly condemn surgical interference, but I am convinced that many lives have been lost in the last few years by the interference of skilled and unskilled operators, when, by the

proper use of electricity or other milder means, they might have been relieved of all the distressing symptoms and enabled to live many years in comparative comfort.

Among the authors who have advocated the treatment of uterine fibroids by electricity during the last year are Bradford, Black, Bigelowe, Ashby, Aveling, A. B. Carpenter, Clement, Davis, Delassus, Durante, Engleman, W. Fischel, Goelet, Keith, E. L. Overman, W. S. Playfair, Lathorn Smith, and many others of equal popularity and ability. On the other hand, we find Chadwick, Tate, Waley and a few others who condemn the method, acknowledging that they have not given it a thorough trial.

That many surgeons have been disappointed with their results from the use of electricity, I think is due to too much enthusiasm and too great expectation as well as an improper selection of the cases and a want of a patient, persistent and proper application of the remedy.

No tumor in which there is suspicion of cystic degeneration should be treated by electricity. Galvano-puncture should never be used when it is possible to reach the tumor through the uterine canal. When this is not possible, puncture should be made through the cervix or vaginal wall, carefully avoiding the bladder and large blood-vessels.

The current must be localized and confined as closely as possible to the tumor. In all cases the dose should be accurately observed. One pole must serve as the active agent for the application of the current, and upon this its entire effect is concentrated. The current at the opposite pole is to be disbursed over as large an area as possible, so that its effects will be least perceptible. The poles should be placed on opposite sides of the tumor and as near to it as possible, the indifferent pole being placed on the largest and least sensitive surface. The current should be of sufficient strength to accomplish the object desired in the shortest possible time without detriment to the patient. There is considerable difference of opinion as to what this strength is. In Dr. Chadwick's very unfavorable cases the strength of dose ranged from 45 to 175 milliampéres. Much larger doses have been used by others with no bad, but the very best effects. The dose should always be governed by the character of the individual case, and the effect produced as the dose is gradually increased. There is often a temporary aggravation of

the symptoms at the commencement of treatment, owing to the congestion which arises in the tumor and surrounding tissues. This, however, soon subsides, and gradual improvement will take place if the case is properly selected and the treatment correctly applied. From what appears from the reports of the best results we cannot expect much good from a current of less strength than 80 milliampéres, and that it is rarely advisable to use over 250. Another very important requisite in the use of electricity is to have a battery of sufficient strength, and that will produce a smooth-flowing, constant current. An instrument with 50 or 60 improved Law or Leclanche cells will answer all purposes. With this we need a rheostat for the purpose of controlling the current strength, and an ampéremeter for measuring the amount used. The abdominal electrode should be large and flexible so as to adapt itself accurately to the surface of the abdomen. It may be composed of clay, lead or tin, covered with clay, gauze, canton flannel or buck-skin held in place by a quilted sand-bag. The internal electrode may be made of carbon or some metal plated with gold or platinum. For electro-puncture is required a strong steel needle insulated to within half an inch of its point. With proper care and skill no anæsthetic is necessary except for very nervous or hyperæsthetic patients, and in electro-puncture. The patient having removed the corset and loosened the clothing around the waist, should assume the dorsal position. All scratches, pimples or excrescences of the skin should be covered with bits of court-plaster or oiled silk, to render them less sensitive to the current. The abdominal electrode having been soaked in warm water, should now be applied so as to come in contact with the abdomen throughout its entire surface. The epidermal layers of the skin being moist, the current passes with less resistance and consequently with less pain. Warm dry cloths should be placed over and around the electrode to protect the clothing and other parts of the body from undue moisture. (Throughout the entire procedure the greatest antiseptic precautions should be used.) The internal electrode should be carefully introduced. The rheostat being at the greatest point of resistance the connections are made and the current turned on very evenly and slowly, and gradually increased from nothing to 50 or 100 milliampéres in the course of one minute. The first sitting should not be longer than six minutes. The current should not remain at its highest longer than three

minutes, and should be slowly reduced to nothing. Great care should be taken to avoid anything that would suddenly increase the intensity of the current or produce oscillations of the electrode which might cause severe and painful shock. If electro-puncture is used the needle should not be introduced more than one and a half inches, and not so deep in small tumors. The after treatment should be conducted according to the effect produced. If there is pain or evidences of reaction with elevation of temperature; rest and ice-bags over the region of the tumor should be required until the bad symptoms pass off. Excessive hemorrhage should be treated with tampons of styptic cotton.

In the surgical treatment of uterine fibroids there are no very important recent developments. As I have heretofore intimated, there has no doubt been too much ethusiasm among many surgeons for operative interference with uterine fibroids. Many of them, looking upon all fibroids as requiring treatment, and being desirous of doing something reputable, have done operations when the emergencies of the case did not call for it, and relief might have been had by milder means. At least one-half the fibroids that come under the observation of the physician call for little or no treatment at all.

Only those tumors which are growing rapidly in young women and those which are rapidly depreciating the health by excessive hemorrhage—those that are in a state of degeneration, or are known to be cystic and have resisted all other treatment, should be subject to surgical treatment. Of course there are exceptions to this rule where operations of various kinds should be done without delay.

There are various methods of surgical procedure. Sub-mucous polypoid tumors may be removed by torsion, or the chair ecrasure, or ligature. Interstitial tumors of the cervix and sub-mucous tumors of the body and fundus may be removed by vaginal enucleation. In this operation, after opening the capsule with scissors or some blunt instrument, the fingers should be used to peel out the tumor, which may be grasped and held with volsella or blunt forceps, but as little traction as possible should be used.

Many interstitial fibroids of the body and fundus and all sub-peritoneal fibroids will require laparotomy. In those fibroids which for any reason do not admit of operation, the hemorrhage may be relieved by oöphorectomy.

V. Stäheli reports 16 cases where double oöphorectomy was performed for hemorrhage and other symptoms caused by the pressure of inseparable fibroids. The ages of the patients ranged from 29 to 48 years, and the duration of the symptoms from four months to nineteen years. There were two deaths and two cases where the hemorrhage recurred. The others were cured. Besides laparo-hysterectomy, in which the entire uterus, with its fibroid addition, is removed through the abdominal wall, some German gynæcologists have lately opened the abdomen, split the peritoneal capsule of the tumor, enucleated the latter and closed the wound by deep sutures. Several operators have also removed the uterus per vaginam with its fibroid growth. In laparo-hysterectomy the chief point of difference, and perhaps the most important point is, the disposition of the pedicle.

Bantoc, Lawson Tait and others are strongly in favor of the extra-peritoneal method.

Hector Trenb does the operation with as much speed and simplicity as possible, dusts the pedicle with iodoform and drops it. He has had two deaths in 17 cases. Fritsch employs a modified extra-peritoneal method which consists in the excision of the mucous membrane of the cervix, suture of the raw surface towards the vagina, suture of the stumps of the broad ligaments to the sutured surface of the serosa uteri, fixation of the stump of the uterus at the lower angle of the abdominal wound and careful closure of the latter.

Price advocates the dry extra-peritoneal method. After the clamp is applied the stump is cut off and trimmed down as far as seems compatible with safety. The stump is then drawn down into the lower angle of the incision, and its peritoneal covering above and below the wire stitched to the abdominal peritoneum, two or three stitches being all that is necessary. This shuts out all possible chance of sepsis. A dry dressing of iodoform gauze is applied. In case of large, succulent stumps he applies bichloride directly to the surface. Under this treatment the stump becomes completely mummified in a few days, according to the pressure made by the clamp, and drops off without odor or discharge. The union of the incision is scarcely delayed. It is important that the wire should be strong and pliable, but not ductile. Delta metal probably answers best.

In conclusion :

(1) I would say, don't be over anxious about fibroid tumors of the uterus, remembering that about one-half of those that come under the observation of the physician call for no active treatment at all.

(2) That correct diagnosis as to the character, situation and rapidity of development, as well as the age of the patient, are of the greatest importance in the selection of the treatment.

(3) That medical and electrical treatment should be carefully tried, where practicable, before resorting to vagino- or laparo-hysterectomy, or other serious surgical procedure.

REPORT OF THE CHAIRMAN ON PRACTICE.

By Leonard G. Broughton, M.D., Reidsville, N. C.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.)

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

The report which I present to you to-day for acceptance is offered with much reluctance, for well do I know how imperfectly it is done. But I know that, the circumstances being considered, I have done the best I could, and I trust I will receive as a reward at least your attention and patience while I attempt to read it.

In reviewing the literature of the past year, I find that the medical world, true to its past record, has been alive and busy, ever keeping abreast with progress in all the lines of art and science. Yes, indeed, too much has been the progress along the line assigned he writer to be mentioned in this report. The probability is, that in the history of the medical profession, there has never been a time when the "medicine man" has been so much in demand as during the past Society year. The unusually warm winter, preceded by so wet a summer, has probably been the source from which has arisen all, or a great part, of the extra amount of sickness during this time. The epidemic of "La Grippe," which visited our country has very probably been in itself the cause of a great majority of the physical suffering of the past winter. But still, with all of our trouble in North Carolina, our mortality rate has not been so much increased, certainly by no means in proportion to the amount of distress.

Our profession, it seems, has been equal to the emergencies. I think it safe to say that increased confidence has been gained by the physician during the past year by his skill.

And now, Mr. President, after these few preliminary remarks, I ask for your consideration of the report proper.

For convenience I have divided the report into three parts, each being presided over by a gentleman who will read a paper on his respective lines. First is the department on febricular diseases, presided over by myself, and I will give a paper on "Typhoid Fever."

Second is the department on diseases of the respiratory tract, presided over by Dr. James A. Hodges, who will give a paper on "La Grippe." Third is the department on "Gastro-intestinal Troubles," presided over by Dr. —. Booth, who will give a paper on "Cholera Infantum." The papers of these gentlemen will constitute the report of the Section on Practice; and it is earnestly hoped by us that we may incite enough interest in these respective subjects (in all of which we should be interested) to awaken some discussion, that the truth, as it is wanted to be brought out in these papers, may be set forth. Taking these papers in the order in which they come, the paper on "Typhoid Fever" will come first, after which these gentlemen, who have been so kind as to assist me, will read their respective papers.

TYPHOID FEVER.

I find in looking over the literature on febrile troubles of the past year that the great majority have been on the subject of typhoid fever, and principally, too, on the line of treatment. Scarcely has a journal gone out but that there has been some mention made of typhoid fever. And while, according to my mind, there has been very little gained during the past over the year preceding, yet there has been a great interest kept up all the time, and some good has been accomplished; and in this paper I shall try to make mention only, so far as I can, of those things of most interest.

Etiology.—There has always been a great dispute as to the etiology of this trouble. It seems that the profession is willing to concede to the opinion of the men of investigation concerning most anything else, but not typhoid fever. Why this is I do not know. But I think to-day the important part played by ptomaines in the production of this trouble is not so much a question to be discussed as a fact to be accepted. The microscope has been of vast importance in settling the once mystical idea concerning the etiology of typhoid fever, and with each and every microscopical examination there is gained new victories for the influence of certain pyrogenetic agents in the production of this dreaded trouble—typhoid fever—and it does seem to me that, after these continued demonstrations by the microscopists of the power and the nature of these micro-organisms, as they are found in each case, that these older school physicians should cease their attack upon them, especially when

they have absolutely nothing to offer in their stead as to the cause of this disease. One great question to every thinking practitioner is, where are these "mischief-makers," and from whence do they come? According to Wilson and his co-laborer Solis-Cohen, of Philadelphia, there are three groups of these pyogenetic agents, viz:

(1) Certain ferments which have necessarily no connection with micro-organisms.

(2. Substances that result from putrefaction or decomposition brought about in the body *per se* or in the substance taken into the body by the influence of certain bacteria which may be operating in the bowel.

(3) Certain pathogenetic micro-organisms taken into the body from the atmosphere.

I think the second classification most applicable to typhoid fever, not that I do not believe and appreciate the presence of micro-organisms in the atmosphere, but I fail to see how such an organism has to do with the production of a disease which is not directly contagious, and not believing in the contagiousness of typhoid fever, I dare not accept such a course. I believe with Drs. Waugh and Mendenhall, that the germ of typhoid fever is produced in the gastro-intestinal tract as a result of the *special* bacteria acting upon the *special* ferment or substance taken into the bowel. I say special bacteria, for Weinstig, a great German microscopist, and others have demonstrated that at all times there are various forms of bacteria lodged in the bowel capable of producing different results when under the proper kind of influence.

It is not to be understood that typhoid fever is not transmissible from one to another by means of the dejecta, for that fact is well established, but the most frequent cause is to be understood as arising from a germ developed in the bowel.

In this connection I will say a word as to the long-accepted doctrine that children could not have typhoid fever, owing to the absence of Peyer's glands. I have never believed such a doctrine, and, according to Forchenheimer's report of the recent epidemic of typhoid fever in Cincinnati, such a doctrine is without clinical backing, for in his practice nine-tenths of the cases were children. Let me say here that I do not believe that Peyer's glands furnish the primitive soil for the development of the typhoid fever any more than any other intestinal gland or follicle. That it is not the first

affected in most cases I do not doubt, but that it has in it any special magnetism to abort the typhoid germ I do not believe.

We hear a great deal, in our Southern States especially, concerning "typho-malaria." We are all familiar with these so-called fevers, also with "continued malarial fever," so-called. We see them every spring and summer. In them typhoid fever is excluded from the diagnosis because of the absence of what the old writers called *special typhoid* symptoms. I am very much inclined to the opinion of Dr. Dunn, that we have either typhoid fever or malarial fever, and that such a thing as "continued malaria" is a *misnomer*. Where is the malaria? Quinine is the sure antidote to malaria, and the temperature range is unaffected by this drug, only made higher. And there is no periodicity—a thing absolutely characteristic of malaria. There is also no malarial icteroid hues of the skin. No hepatic tenderness or splenic enlargement. My main point in making my diagnosis is on the action of quinine; if it fails after repeated trials to produce a remission, I discard malaria in any of its forms, and I am done calling these spring and summer fevers we have, and are not affected by quinine—only made worse—anything but straight out typhoid fever, and treat them accordingly.

Treatment.—As was said in the beginning of this paper, much of the literature of the past year concerning this disease has been on the line of treatment more than any other; and in discussing it I will follow the division of the *Annual of Medical Sciences*, believing it the best and simplest:

(1) The bath.

(2) The medical treatment which consists of, first, antipyretics; second, antiseptics; and third, suppuratives.

The Bath.—Much has been said during the past year on this line—different methods, claiming superior merit have been advocated by different writers and experimenters.

Leibermeister, a German writer discusses the bath treatment as follows: "The height of the temperature is one principal source from which danger arises, and hence the therapeutic problem is to reduce the temperature, and the cold bath rapidly withdrawing the temperature, is to constitute the basis of the treatment. There is, as has been said, much diversity of opinion as to the manner of using the bath. Eminent men are for and against the cold bath; for instance, Loomis, of New York, plants himself squarely against

the plan of *rapidly* withdrawing the temperature by cold bath. In a paper before the New York State Medical Society, in February, 1890, Dr. Loomis discussed this treatment fully and liberally, taking the ground that "our treatment, so far as cold bath is concerned. would vary according as we regarded the danger of high temperature, himself regarding it of slight importance in a majority of cases." He looks upon the temperature as only the expression of morbific change within, and so long as the morbid action goes on, so long may we expect the temperature to rage; and if a reduction of the temperature is the only thing to be accomplished, he could not see why the other simpler means would not answer better; while on the other hand, if the beneficial effect was due to the control which the bath had over the thermo-genetic and vaso-motor centres, it should be advocated upon an entirely different basis than the one usually advanced. He had been in the habit of using for a number of years the cold coil to the bowel, and believed it would, if used in time, and properly, keep down the temperature below the regarded danger-point. But, despite the plain reasoning of Prof. Loomis, *et al*, the cold bath treatment, especially after the manner of Brandt, has many advocates in this country, and it seems has many points in its favor.

Probably among the most important or prominent advocates of this plan of treatment is Dr. Simon Baruch, of New York, who, in a well-written paper before the New York Academy of Medicine, set forth the following facts :

(1) The Brandt system of bathing for typhoid fever is not directed solely to the reduction of temperature, but also as the best means of restoring and sustaining vitality.

(2) That the plan of bathing in this country is far from the plan advocated by Brandt. In order to operate strictly the Brandt system, the bathing should be begun as early as the fifth day. The temperature of the water should range at first from 75° to 80° F., and rapidly brought down to 65° to 70° F., patient allowed to remain in the water for ten minutes. This should be separated every three hours if the temperature rises above 192° F. If constipation exists, cold enemas; if diarrhœa exists, ice-bag to the bowel, with ice-water internally and by enema.

(3) That the statistical report of the operation of the Brandt system is far more encouraging than from any other plan; for in-

stance, at the garrison at Munich the mortality rate fell from 40–23 per cent. to from 4–2 per cent. under Brandt's treatment.

There is still another school of hyoropaths who advocate the use of the cold bath, rapidly withdrawing the temperature, after which large doses of quinine are administered with the view of holding the temperature down; and under this treatment it is claimed that the mortality is far lower than under the expectant plan. But it must be credited to the cold water, and not to quinine, for it has been well demonstrated that quinine has no power to prolong the remission of typhoid fever brought about by whatever plan of treatment.

As for my own experience in the *systematic* use of cold water after the manner of Brandt, I cannot speak, because it has been so limited. The plan is totally inoperative in private practice in general. But a modified form of bathing I am much in favor of, both as an antipyreric and for its influence over the nervous system—preferably for the latter, however. I always use it when the fever is high and skin dry and the patient is nervous and reckless.

Internal Antipyretics.—There has been much written of late years concerning the internal administration of antipyretics *pro* and *con*, and while they still occupy their place in fevers, yet the profession has ceased to place that unbounded confidence in them that they once had. They are now only given in extreme or dangerous temperatures, and then in small doses, and frequently repeated until the temperature falls below the danger-point, when their administration ceases—preferably among them, according to weight of evidence, is antipyrine, while antifebrine and others have their advocates.

Antiseptics.—The antiseptic plan of testing typhoid fever has only of late occupied the attention of medical men. This plan of treatment has grown out of the germ theory concerning the disease, and I am inclined to the opinion that it is the only rational way to treat this trouble, since we pretty well all agree that it is essentially a germ disease. Now, I do not claim, by any means, that as yet we have a specific absolute for typhoid fever, but I do say that, as sure as there is any certainty in medicine, *there is a specific* for typhoid fever, and I believe with our modern antiseptic practice the disease is as capable of being cut short as many other diseases about which we raise no question as to their abortion. If we accept Menden-

thall's and Waugh's theory, that the germ of typhoid fever is caused by decomposition in the bowel, and I am sure it is the most rational, how can we believe otherwise than that it is cut short by remedies preventing such putrefactive changes. True, we may not prevent it after such change has *actually* taken place, but even then many of its distressing symptoms may be cut short, or even prevented. The distressing nervous symptoms, such as delirium, subsultus, etc., are now by some of the most distinguished men regarded as the invasion of the products of germ action, and in proportion as these germs increase will their product increase and these symptoms be aggravated. Now, then, if by modern asepsis, we prevent the formation of the germ, or by antisepsis we destroy the germ, and such productions, with their destructive results, cease, what goes with the theory of self-limitation? Will the remedies do this? Why not? Will they not prevent putrefaction and decomposition in other cases? Why not in this? If they will in other circumstances, most certainly they will in this. What are the remedies most likely to do this, and at the same time that are not hurtful in other respects? First of all I put mercury. Why? It has been a custom almost as long as we have had any knowledge of medicine to give mercury on the beginning of all febrile disorders. This practice has been routine and empirical in most cases, and yet a world of good has come from it. All authorities agree that our own systems have in them a laboratory which produces a substance far richer in antiseptic powers than almost any compound dispensed at the hands of the most skilful chemists, and this substance we call bile. It is a fact that it will prevent decomposition in the alimentary tract as nothing else will. So, then, in order that we shall have the quickest and most successful disinfection of the bowel, we must stimulate the liver to throw out an extra amount of this fluid, and there is nothing that will more successfully do this than mercury in some form, besides it in itself is highly antiseptic. The preparation I like best in these cases is the protoiodide in 1-100 grain doses every hour till its effects are produced. Many times I use calomel in small doses with good results. Who knows but that the old dose of calomel has aborted many a case of typhoid fever by this means. I believe it, although given with an entirely different purpose. Next to mercury comes zinc sulpho-carbolate, sub-carbonate of bismuth, naphthaline, resorcine, carbolic acid, iodine, the mineral

acids, etc.; preferable among these I like the zinc sulpho-carbolate in 2 to 3 grain doses every two or three hours. I have found it an excellent remedy, especially when there is an astringent antiseptic needed.

Supportives.—Of course, with any treatment typhoid fever patients must be supported by the best means. And when we speak of the specifics for typhoid fever, we do not at all underrate the supportive treatment. Our sheet-anchor should be to prevent further infection, then palliate symptoms and support strength. It seems to me that, with these clearly before us, typhoid fever should carry with it not so much dread as formerly. And is it too much to hope and expect that the day is not far distant when we will have as much a specific for typhoid fever as we have for malaria, except it may be in a more protracted way. It need not be mentioned here as to how the best means of support shall be obtained. Our own individual ingenuities will select for us according to our own likes. Let our food be, however, of such a character as will require as little intestinal digestion as possible, especially as this is applicable to the active inflammatory or ulcerative stage.

There are many other things that could be said concerning the treatment of this disease, but I must stop lest I tire you too much, which I fear I have done already by the length and quality of this paper.

In conclusion, I would like to bear testimony to the efficacy of arsenite of copper in the treatment of diarrhœa of typhoid fever. I give it in infinitesimal doses of 1-5000 grains every few minutes. I prefer it to opium for many reasons, chief among which is the deleterious effect of opium over the secretory organs.

LA GRIPPE.

James A. Hodges, M.D., Fayetteville, N. C.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

La Grippe has been recognized as a well-defined disease for many years in medical literature. The unenviable distinction, however, which the recent epidemics of it has acquired by reason of sensational newspaper accounts, will cause it to serve as another millstone in the history of the nineteenth century.

History.—Its recorded history reaches far back into the early centuries. The first epidemic that is recorded was in the year 1173, when it raged with great virulence throughout Italy, Germany and France. During the fourteenth and fifteenth centuries there were seven different epidemics of this disease.

In 1510 the first epidemic which prevailed throughout the whole of Europe was recorded, and in 1627 it first made its appearance in America, beginning in the New England States and spreading thence over most of the Northern States.

In the eighteenth century there were eighteen epidemics, one of them beginning in New England in 1732 and spreading thence all over the globe.

During the present century this disease has prevailed at eighty-four different times, the last visitation occurring in 1879, when it was not very prevalent nor very virulent, except in the vicinity of Charleston, S. C.

The recent epidemic, which has just visited us, had its origin in Russia about November 1st, 1889. By December 15th the disease had spread over all northern Europe, and in the last week of that month it reached this country. It is doubtful whether to Boston or New York belongs the honor of having had the first case, but it is certain that both cities suffered severely from its ravages, over 200,000 cases being reported in the latter city within fifteen days after its first appearance. During the first week in the present year it reached this State, and in the two weeks following it was reported as prevalent in sixty-eight counties.

The American epidemic seems to have been identical with the

Russian influenza, both as regards the symptoms of the disease and its progress, its line of march being steadily from East to West, with some slight capriciousness, until it at last became truly pandemic in its character.

Varieties.—The French writers distinguish three forms in this malady—the painful or nervous, the gastro-intestinal and the catarrhal. As the disease has appeared here, however, only two distinct varieties have been well marked, namely, the nervous and the catarrhal. The former variety has been the most common, the latter occurring in only about 10 per cent. of the cases reported, but with increased severity.

Etiology.—The etiology of La Grippe is as yet entirely unknown, though the bacteriological study of the recent epidemic may yield some practical results. Peculiarities of climate, season or meterological conditions apparently have no influence upon the causation or diffusion of the disease, for it has been observed in Russia, for instance, in mid-winter and in the West Indies in mid-summer. As to its contagious or infectious origin, observers of the highest learning and repute differ very materially. Those holding the disease to be contagious defend their theory upon the following grounds; they say that they can adduce numerous instances of contagion from infected clothing, litters, etc.; that the disease follows the line of railways and commercial travel; that even in hospitals it has a tendency to affect patients in regular order, traveling from bed to bed; and that it chooses its victims among masses of the population living together under the same roof and under the same sanitary conditions, such as factories, garrisons and schools. On the other hand, the arguments advanced by those who contend that the disease is infectious are that its rapid and almost simultaneous diffusion precludes the idea of personal contagion, it having been known to have girdled the globe in forty days and to have spread throughout an entire hemisphere in six months; that there have been many persons who have never been subjected to the disease that have been seized with it only a few hours intervening between the attacks in each case; and they also maintain that if it were a contagious disease that it would be always present, not allowing thirty or forty years to pass without an outbreak, but constantly recurring as other like contagious diseases. It is evident, and must be admitted, that the adherents to neither theory have conclusively proved their

proposition, for it is positively known that, while one or two members of a large family have been afflicted, others, though exposed to the disease, have enjoyed perfect immunity. Hence, while it may not be directly contagious, or at least only slightly so, it is known, unquestionably, that its propagation is owing largely to infection, and that the disease is due to some micro-organism, although no specific germ has yet been isolated, which is disseminated in and by the air, and probably also by the clothing and other material. This micro-organism is doubtless extremely minute and very light—capable of being borne by the upper as well as lower strata of the atmosphere, for this disease has been known to spread in a direction contrary to the prevailing wind at the earth's surface.

In the writer's opinion Prof. Rohé, in the following extract, has best summarized the action of this subtle germ as the cause of this most anomalous disease. He says :

"Is it due to some subtle change in atmospheric conditions, to a diminished resistance of the system to external influences, or to a micro-organism? If the latter, how can its rapid spread be explained? Perhaps all three of these factors may be invoked to account for its outbreak. We may, I think, rationally suppose it to be due to a micro-organism. This micro-organism may be assumed to be constantly present in the atmosphere, but only under certain atmospheric conditions does it become sufficiently virulent to become pathogenic. Under these conditions it attacks the mucous membranes of the respiratory passages and entering the blood produces the symptoms that characterize the disease. Those who would regard this view as absurd, are asked to study the conditions under which croupous pneumonia developes. The pneumonia germ (Sternberg's micro-coccus Pasteurii, Fränkel's pneumonia-coccus), is always present in the atmosphere or in the buccal secretions. It is only at certain times, or perhaps it would be more correct to say, under certain (atmospheric) conditions, that it becomes pathogenic, and results in outbreaks of pneumonia which sometimes assume an epidemic character."

Symptoms.—The onset of the attack is sudden in either variety the period of incubation lasting from eighteen to twenty-four hours.

The cases suffering from the painful, or nervous, or febricular form of this disease are usually ushered in with a chilly sensation

or decided chill. Pain is a prominent symptom and is felt all over the body without the ability to particularly locate it, but generally it is severest over the frontal sinus, in the back and through the lumbar region. All the muscles are sore to the touch, the eye-balls being painful on pressure. Vertigo is often experienced. The temperature rises suddenly and varies, according to the attack, from 101° to 105° F. The pulse is accelerated, but not in proportion to the high temperature. The tongue is not usually coated, but the bowels are obstinate. Sometimes a cutaneous rash appears, simulating scarlet fever or measles, but it is not uniform and is evanescent, and disappears in from twelve to twenty-four hours. As the disease progresses the painful sensations became almost unbearable, especially in the hips and bones of the lower extremities—the prostration is excessive and out of all proportion to the length of sickness or the seeming severity of the attack. The same prodromal symptoms, more or less aggravated, are noticeable in the catarrhal form of this disease, with the addition of sneezing and coughing and acrid discharges from the eyes, nose and throat, the result of a congestion of the mucous membranes of the respiratory tract. Sometimes, also, there is developed an acute catarrh of the stomach, with persistent vomiting.

In many of these cases the senses of taste and smell is lost temporarily.

Termination.—The disease in itself is rarely fatal. Only aged and enfeebled persons, or those suffering from consumption, Bright's disease, heart affections, or some chronic ailment, have succumbed to it. In the usual course of the disease the tendency in the nervous form is to recovery in from thirty-six to forty-eight hours, and in the catarrhal in from three to nine days. Convalescence in the latter form, however, is slow, oftentimes the patient remaining weak and prostrated for days and even weeks, melancholy is induced, and the slightest exertion is liable to produce a relapse.

Complications.—The complications of this disease are limited almost exclusively to its catarrhal form, the most common complications being capillary bronchitis, broncho-pneumonia and a chronic catarrh of the air-passages. Large numbers of cases of acute otitis media have also been reported. Acute pleurisy and pericarditis have likewise been reported as having been observed as concomitants of this disease. La Grippe has been followed, too, by

a lethargic sleep which lasted several days, according to reports from Italy.

Peculiarities.—Males appear to be affected more frequently than females. Children scarcely ever have an attack of it, and the same is also true of negroes. Those who are engaged in outdoor occupations are more susceptible to an attack than those engaged within, it is said.

Treatment.—The best treatment is one which will tranquilize the patient, soothe and comfort him, open up his secretions, impress his excretory organs, and reduce his temperature. It must be varied, of course, according to the symptoms presented in each case, and consequently the treatment remains a *quaestio vexata.* An hundred species have had their respective merits vaunted, but no single one has been found to meet all the requirements. For the purpose of reducing the fever and relieving the neuralgic pains, antipyrine or phenacetine in 5 to 10 grain doses every two to four hours for an adult, or, better still, a pill containing 3 grains each of acetanilide and quinine, with 1-6 of a grain of cocaine hydrochlorate added, every three hours. For the catarrhal form, benzoate of soda, in 10 grain doses, every three hours, may be given as a stimulator of the glandular system, followed by expectorants and sedatives as needed, together with inhalations of the compound tincture of benzoin and atomizations of listerine, if the irritation of the mucous membranes of the throat is pronounced. In the writer's judgment great care should be exercised in determining the advisability of giving cathartics, for, in his experience, the convalescence has been slowest in those cases in which they were used.

Whatever may be the form of the disease, it is imperatively necessary to sustain the strength of the patient, and to this end tonic doses of quinine should be given, together with such stimulants as tea and rum, and ample quantities of such sustaining diet as milk and eggs.

The patient should be advised not to leave his room until he has entirely recovered, for all of the graver complications that have supervened have been occasioned by such imprudence.

Prophylaxis.—The same prophylactic measures which are indicated in all pulmonary diseases are to be instituted to prevent this disease, viz: the avoidance of exposure and excess. Old persons, especially, should wear warm clothing, adopt a plain and nourishing diet, and strive to maintain their physical constitutions at the highest possible point by a well-directed regimen.

THE REPORT OF SECTION ON MICROSCOPY AND PATHOLOGY.

By Julian M. Baker, M.D.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

This branch of medical science, the progress of which during the past year I am expected to report, has contributed in recent years more to the scientific perfection of our profession than any other.

Microscopy is gradually supplanting rational empiricism and accidental discovery in our progress toward the goal of a positive science. The results of patient and intelligent effort in this comparably new field of inquiry have been such in the past that I fear we are becoming impatient at the slow and steady progress now being made, and expecting important discoveries every year to produce a revolution in the scientific world. Koch and Klein, Pasteur, Cohn, Councilman, Sternburg, Fréire, and their host of co-workers, should not be expected to accomplish all things in so short a space of time. We have a right, however, to expect each year to bring forth much that will both interest and instruct us. The past year is characterized, not by brilliant or startling discovery in the field of microscopical research, but by the utilization, application and intensifying, so to speak, the truth of previous speculations, by improvement in technique, perfection of instruments and methods, and a large increase of the number of investigators. In order to present systematically the subject, we will consider it under three heads, viz: Technology, Histology and Bacteriology, with a casual consideration of practical results.

TECHNOLOGY.

In Technology many improvements have been made tending to the perfection of the methods of investigation. Without attempting a description of each, mention may be made of the *new hardening method of Bunda, the new injection apparatus invented by Borden*, the new method of imbedding suggested by Kraus, the

new staining process suggested by Regnault, Leven and Borden, and the modification of Weigert's method by Pal.

In the hardening method of Bunda, the nucleus and protoplasmic structures are preserved. It saturates readily large organs, hardens in a few days and does not interfere with various staining methods. The specimen is: "First placed in a 10 per cent. aqueous solution of officinal nitric acid for 24 to 48 hours, and then, without washing, into a solution of pot. bi-chromate, 1 vol., water, 2 vol. After several hours the solution is renewed and bi-chromate of pot. increased to equal parts. The process requires only one or two days for its completion."

A new injection mass has been recommended by Miller, which overcomes many of the difficulties of the ordinary gelatine mass. It is prepared by soaking one ounce of French gelatine in 10 ounces of water for one hour; it is then melted over a water bath and strained, while warm it is divided into two parts, to one of which is added 2 grs. of common salt, and to the other 10 grs. of nitrate of silver; the two are then well mixed, well shaken, and 10 grs. of citric acid added and kept warm until dissolved. It will keep, and a section injected with it has a beautiful purple color and is perfectly translucent.

Another method, suggested by Taguchi, in Archives of Microscopy, is injection with India ink prior to hardening, the ink not staing the tissues outside the vessel wall.

An admirable method of imbedding is suggeste by Kraus, in *Buffalo Medical and Surgical Journal*, by hardening in 95 per cent. alcohol, then in oil of turpentine for eight days, after which the specimen is dried on filter paper and placed in melted parraffine at 122° F. for eight days longer, and finally on thick filter paper in an oven for two days. This is probably the best method for imbedding tissues.

As to new staining processes, henna is suggested by Regnault, saffron by Leven, alum carmine by Borden; each has its advantages in special cases.

By modification of Weigert's method, as applied to the central nervous system, Pal has made the process more rapid, elements more sharply defined, and is able to stain nucleus and nucleolus separately.

An accidental discovery by Letulle shows that cosin and caustic potash have a selective action for "amyloid infiltration of tissues."

Specimens treated with these materials, as suggested by him, show the following changes: "Elastic tissue becomes violet red, connective tissue is either uncolored or yellowish pink, muscular fibre becomes orange brown of varying intensity. The walls of the capillaries, peri-vascular and peri-capillary connective tissue show a brilliant rose color, masses of "Amyloid substance present a light yellow coloration."

MECHANICAL CONSTRUCTION OF INSTRUMENTS.

The improvements in mechanical construction of instruments have been the formula of Gundlach, by which apochromatic objectives can be used without compensating eye-peice, described in the "Microscope," Vol. I, p. 8; the automatic stage described by Edmunds in *Journal of the Royal Microscopical Society;* the camera lucida, invented by Thoma, to overcome the difficulty experienced in working low powers with those in use. Minot has invented a microtome in which the knife is statiouary, while the object is moved up and down by mechanical attachments so adjusted that the machine can make sections from 1-25 to 1-300 m. in thickness, as is desired. Bumpas, in the *American Naturalist*, and Reynolds, in the *Microscope*, described very simple section-smoothers which can be attached to the knife in a few minutes.

HISTOLOGY.

In the mucous membrane of the stomach Lukjanow has discovered what he terms "Nuclei Claviformis," being club-shaped bodies in nucleus with spherical nucleoli, or long irregular bodies, at times penetrating the nuclear membrane. It is contended that this discovery goes to establish the fact that the nucleus is an independent morphological element, and not a semi-fluid uniform mass, as formerly supposed. Investigations by Leser, reported in *Archives of Microscopic Anatomy*, in regard to ossification, shows that the formation of cells in the epiphsial cartilage takes place as it does in other tissues, "a series of typical changes in the cell nucleus, finally resulting in its division, followed by that of the cell." The arrangement of these proliferated cells in columns, together with a slight degree of mitosis, results in the growth of the long bones. The protoplasm near the medulary space appears like a vesicle, and near

the border of ossification some large cavities are empty, others are filled with the remains of protoplasmic cell substance; there being no trace of karyokinetic figures, into these cells blood-vessels soon penetrate and establish connection with the medulary space, various forms of granular cells immediately appearing.

Polgakoff has found the peculiar spherical cell, discovered two years ago by Zawarykin in the subcutaneous connective tissue of a white rat, in the loose connective tissues throughout the body, but particularly in those parts where there are collections of fat. They closely resemble embryonal cells, being about twice as large as lymph corpuscles, with large globular nucleus and several nucleoli; nucleus is surrounded by a transparent layer of protoplasm, free from granular matter, of high refractory power and feeble staining qualities, while nucleus itself is rapidly stained. Under varying conditions of nutrition the cell enlarges, increases its protoplasm and has been observed five or six times as large as a leucocyte, the nucleus undergoing change at the same time, nucleoli become invisible, nucleus divides, followed by division of protoplasm, which arranges itself around each newly-formed nucleus. In this way each cell divides into two daughter cells with from three to seven nuclei, each with one or more nucleolus, a common protoplasmic layer surrounding the whole. The external layer becoming thinner, the daughter cells appear distinct from mother cells, protoplasm disappears, and they are set free as independent entities, shining fat globules sometimes make their appearance in the protoplasm, giving it a distinctly granular appearance, before segmentation takes place. At first these fat cells serve as nutriment for the dividing cell, and being distributed along the line of division facilitate the constricting of the daughter cells. They possess the power of amœboid movement the same as leucocytes, and no doubt penetrate the vessel walls. Under increased nutrition the granular appearance of protoplasm gives way to fat globules and presents a yellowish appearance with picrocarmine, whereas before it was uninfluenced. From this investigation it is a safe inference that this is a "definite physiological process, consisting of the elaboration of fat in the protoplasm of the spherical cell from the albuminous material carried to them by the blood," and the conclusion is drawn that this new spherical cell discovered by Zawarykin and studied by Poljakoff is really a *fat-forming cell.*

Kultschitzky, following up the investigations of Spee in regard to muscular fibre of small intestines, has found the muscular bundles from all three layers of the *muscularis mucosæ* destined for the mucous membrane, running up to the basement tissue just below the glands of Lieberkühn, whence they proceed to the villi parallel to the long axis of the gland; here they converge, running along the canal of each villus around the lacteal vessel. In their course branches are given off toward the periphery, finally becoming attached to the under surface of the epithelium, a portion, however, reaches the apex of the villus before expansion; being parallel to the axis of the villus, when these fibres contract the villus is shortened, and in the same way the oblique fibres widen the central canal, so that during the whole period of villus contraction the canal is open and no impediment is offered to the flow of chyle.

BACTERIOLOGY.

The progress of Bacteriology in the last few years is due directly to the introduction into common use of aniline dyes, the homogeneous immersion lense, substage illumination and solid culture media. These have given an impetus to microscopical investigation throughout the world, and promise for the future results surpassing anything yet accomplished, not only in the scientific and theoretical, but in practical medicine.

PHOTOMICROGRAPHY.

The method of preserving bacteriological cultures has recently been greatly improved, so that we may now say that photomicrography is in a fair state of perfection. The objection is urged that it is supplanting the use of pencil and paper in drawing the microscopical appearances, thereby depriving the student of the opportunity of acquiring skill in this line which will be of great utility. Its advantages so far overcome all objections that it seems this is unimportant. The method now generally employed is the use of a flat-sided tube in which to make the culture to be photographed and to immerse this in some medium of the same index of refraction as the medium it contains; by this the high lights are destroyed, and the external vessel being square-sided, the lights from the convexity of the glass are gotten rid of. By this method accurate

impressions of the feathery growth of mouse septicæmia and anthrax, two crucial tests, can be had.

CULTURE MEDIA.

Quite a large number of culture media have been suggested by various observers, but no special advantage over old methods have been found, except, probably, in the "milk rice" suggested by Soyka, of Prague.

Noeggerath makes a most extraordinary assertion in regard to what he terms "the color method" of cultivating bacteria for purposes of easy and rapid diagnosis. It consists in coloring the nutrient media with aniline before the colonies grow, and differs from the "color reaction" as applied to the cholera spirillum inasmuch as this is applied to the cultures with ordinary chemical reagents. The colors used by Noeggerath are methylene blue, gentian violet, methyl green, chrysoidin and fuschi mixed with watery solution in definite proportions; the resultant color should be dark gray or bluish black. Seven to ten drops are to be mixed with the nutrient gelatin. When cultivations are made upon this mass each organism assumes a color peculiar to itself. As yet, however, this so-called discovery by Noeggerath has not been sufficiently proven to be accepted by scientists, but should it be true, its importance in microscopical investigation will be great indeed.

NEW STAINING METHODS.

Of the many methods suggested for staining the bacillus of tuberculosis, little or no improvement has been made on the Koch-Ehlrich method, most of the new methods lacking that degree of certainty so necessary to usefulness in making correct diagnosis.

SPECIAL INVESTIGATIONS.

Cornil and Toupet, in investigating an epidemic among the ducks in the Jardin d'Acclimation in Paris, have met with some curious results. The pathological changes observed were the same as chicken cholera, and an organism was found apparently identical, but its pathogenic properties were different in that no effect was produced upon chickens or pigeons and was fatal to rabbits only in large doses. The inference to be drawn is that "the virus is fixed

in ducks in a constant degree and is inferior in strength to that of chickens."

The bacillus of Asiatic cholera has claimed much attention during the past year, but the work is still incomplete. The "Cholera Red," first noticed by Poel in 1886, and described in 1887 by Bujwid, is still supposed to serve the purpose of diagnosis. It is as follows: "To a 2 per cent. solution of peptone, ½ per cent. of common salt and bicarb. of soda are added to produce an alkaline reaction. This solution is inoculated with cholera bacilli and kept at 370° C. for twenty-four hours; if now HCl, H_2SO_4 phos. acid or oxalic acid be added, a beautiful violet red results." While a number of other organisms show the same reaction, none are so pronounced or occur in so short a time.

Zäslein concludes from his studies of Koch's common bacillus that it has altered in Europe into several varieties, and that varieties exist and grow under different environments from the imported ones. Bacilli obtained in simultaneous epidemics in Naples, Genoa and Palermo behave differently in various ways in plate and gelatin cultures, and a bacillus which answered the requirements of Koch for a month, later showed marked variations in the same nutrient media. The varieties are uncertain and irregular, but he concludes, they follow in their variations laws laid down by Darwin for animals and plants in general in respect to production of varieties. These very important observations under development by future observers may serve as a nucleus around which the grand theory of Evolution will crystallize and reduce the long periods of time necessary for the production of varieties in the animal and vegetable worlds to a comparative microscopical space in the bacterial world, thereby bringing the changes within the sphere of man's vision.

In experiments with the bacillus pyocanis Charin found it to produce disturbance of the kidney when inoculated. In a rabbit inoculated three different times the bacillus and albuminuria appeared, after a while the bacillus disappeared, albuminuria remaining and producing death. By this some light is thrown on the sequelæ of various diseases; scarlatina ends, nephritis, which was produced by the bacillus of the disease, remains after all trace of the organism has disappeared. So with diphtheria the infection ceases, but its consequences remain.

IMMUNITY.

The question of immunity against first attacks of diseases, or its establishment after the first attack has been gone through with, has claimed much attention in the past year and great effort has been made to determine methods of prophylaxis and the nature of the tissue changes which bring it about. Histology shows many conditions explanatory of the fact, but the varied character of the histological soil on which parasitic nosogenesis takes place, and the variety of cryptogamic seed from which it originates, affords a satisfactory explanation of the difference of conclusions arrived at by various observers. Histo-chemistry will eventually furnish explanations of the chemical conditions destructive to cryptogamic developments and throw much light on the life of pathogenic bacteria. The French investigators Sola, Roux and Chamberlan have studied this subject and attempted to establish this immunity by inoculation with chemical products instead of attenuated virus, as originated by Pasteur. "The destruction with high temperature of the *vibrion septique* and the bacillus of malignant œdema leaves behind a chemical substance which has been found to be a vaccine against typhoid fever has been found, and an attempt is now being made at the Pasteur Institute to make one against Asiatic cholera.

Rothlauf bacilli, according to Emerich, disappeared from the bodies of rabbits previously rendered insusceptible by inoculation in from fifteen to twenty minutes, whether a large or small number of bacilli were injected. This destruction occurs by the formation of a soluble bacterial poison by the tissue cells from the elements broken up by the bacilli. The poison is produced in the cell, or outside, when the plasma carries the soluble material into the intercellular lymph spaces. In rabbits this anti-bacterial poison is formed at the time of second invasion and not previous to it, no phagotycosis being observed. Sola concludes, from experiments on this line, that the hereditary predisposition consists in the transmission of a vulnerable epithelial quality; thus a tuberculous parent may transmit to the offspring certain deficiencies of the pulmonary epithelium which furnish a fertile histological soil for the propagation of specific bacilli.

Läffler has studied the changes in milk in relation to bacteria and written very extensively recently on pathogenic organisms in this

common article of food. He found the *staphylococcus aureus*, *albus* and *citreus*, when added to a litmus, colored milk would change the color to white, the creamy layer being red, showing the formation by the bacteria of substances other than lactic acid. Anthrax bacilli precipitated the casein and peptonized it with slightly alkaline reaction. Typhoid bacilli produce a slightly red tinge, showing the formation of lactid acid. Erysipelas coccus reddens without coagulation. The bacilli of tuberculosis, glanders and diphtheria produce no change, while the pneumococcus decolors it. Koch's cholera spirilla decolor it from below, while over the white layer there appears a grayish blue color or else a reddish one. Valuable diagnostic characteristics will no doubt proceed from these discoveries.

The great difficulty experienced by surgeons in sterilizing their hands has been explained by Mittman by means of his study of nail-dirt. He found seventy-eight varieties of bacteria in twenty-five experiments from material furnished by cooks, barbers and waiters, which goes to prove the injunction in regard to cleanliness of nails in preparation for antiseptic operations to be well-founded.

The lower strata of air in sick rooms, according to Neri, do not contain bacteria, but four or five feet above the sick-bed he found sixteen varieties of bacteria, micrococci, streptococci, bacilli and micrococci of septicæmia. Ventilation should then be free from below and upward, and not from above downward.

The subject of suppuration has been reopened by Christmas, who claims to be able to produce it without the presence of bacteria by the inoculation of chemical substances.

Many articles have appeared in regard to the bacilli of tuberculosis and typhoid fever, but no important advancement has been made.

Sternberg's adverse report to the claims of Freire has called out a strongly worded reply from the Brazilian scientist, but as yet we must regard Freire's reputed discovery of the organism producing yellow fever and his method of protective inoculation as *sub judice*. Sternberg's work is being continued and Gibier has been engaged in studying the disease on the part of the French Government.

Those results of retrograde metamorphosis which so nearly resemble vegetable alkaloids in characteristics and composition continue to command much attention. They are, in fact, true animal alka-

loids, and some of them are produced during life by normal cell activity in animal tissues and by cell activity of the ferments. Two great classes are constantly recognized, Ptomaines and Leucomaines; Ptomaines being the name given to those alkaloids formed in the process of fermentation or putrefaction after death, Leucomaines referring to those found in the tissues during life. While they are exceedingly difficult to handle in experimental research, it is pretty well settled that pathogenic bacteria owe their activity, to a con siderable extent, to the formation and toxic effect of these alkaloids. The subject is still in its infancy, so it would be useless to give results of individual experiment.

Much work has been done on the new theory of Phagotycosis as formulated by Metchnikoff, and it has attracted attention throughout the world; briefly stated it is, that the white blood globules devour and digest pathogenic bacteria entering the body, various researches showing that the leucocytes took in and devoured large quantities of splenic fever bacilli, quite a number, however, becoming degenerated outside of the phagocyte. The question then arises, do the phagocytes digest the bacilli, and are they the only tissues that do? Flügge, Bitter and Nuttall have attempted to determine this point, but offer no satisfactory solution. As a portion of the bacilli die off or are destroyed before coming in contact with the phagocytes, it seems probable that they destroy only degenerated bacilli, or, as it has been expressed, are only crematories, as it were. The question is still unsettled and will be a fruitful field for future inquiry.

EHRLICH'S URINARY TEST FOR TYPHOID FEVER.

By Thomas F. Wood, M.D., Wilmington, N. C.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

Ehrlich's test for typhoid fever first appeared in 1882 (*Zeitschrift fur Klin. Med.* 1882, and *Deutsch Med. Woch. Berlin*, 1883, ix, 549, Index Medicus), attracting some general attention at first, but dropped by most experimenters because it was considered unsatisfactory, because it gave the same reäction in some other diseases, as typhoid fever. Even now, after much evidence has accumulated, it seems so incredible that in a complex pathological phenomenon like typhoid fever could be indicated in the secretions, that it has been discarded by many without due trial. My employment of the test I have confined to the diagnosis of typhoid fever, not ignoring the fact entirely that in phthisis, diabetes, some forms of albuminuria, and after the ingestion of some drugs, as iodol, sozoiodol, thymol, strychnine, and some others, that the reäction, or something very similar, has been obtained, but desiring to set on foot a study complete enough to determine for us, who have to deal with all diseases, whether this test would serve as an aid to diagnosis in fever, enabling us to differentiate between one fever and another, so that we would be enabled to say as early as in the first fortnight whether our case of fever was typhoid or not. This is the claim for Ehrlich's test, if applied as early as the fourth day, and not later than the fourteenth, that by a distinct color reäction by means of this diazo-compound we ascertain definitely what kind of fever it is we have to deal with. It need not concern us, then, in applying this test that it gives similar results in other diseases, because we are enabled in a measure to exclude them, and settle what is often a very anxious question to physician, patient and friends.

First as to the reagents:—Sulphanilic acid, the basis of this color reäction is prepared from anilin by heating it with fuming sulphuric acid, but it may be bought of any chemist. The test solution is made by diluting 3 to 4 drachms of hydrochloric acid with 10 ozs. water, and then saturating with sulphanilic acid. Just before using about a teaspoonful of a solution of sodium nitrite (1 part to 200

of water), are added. When the suspected urine and the chemical solution are mixed, the whole is alkalinzed with a few drops of ammonia, when the charcteristic color reäction takes place, and it is only necessary to observe the essential points to insure accuracy.

The formulas are stated as follows :

Solution No. 1.

Sulphanilic acid	3 i.
Hydrochloric acid	gtt. 70
Distilled water	4 ozs.

Solution No. 2.

Nitrite sodium	1 gr.
Distilled water	4 ozs.

Solution No. 3.

Stronger ammonia.....

In a graduated test-tube equal quanties of urine and solution No. 1 are mixed. To this is added one-fiftieth part of solution No. 2, and the whole is alkalinized with ammonia. Healthy urine gives a reaction varying in color from amber to bichromate yellow. In making use of the test it is best to secure a specimen of healthy urine in order to compare the reaction with that of urine from a suspected typhoid patient. If the urine is from a typhod patient it will give an intense scarlet red reaction, varying somewhat in intensity during the days included.

These essential points are a cherry red color imparted to the foam, and after standing some hours the precipitate has a dirty green color.* If the color is intensely red, the foam colored and the precipitate uncolored, we may have only the reaction for bilirubin. All the cases examined were in private practice, either of my own patients or those of other physicians. Cases were not selected, but were examined as sent me, and a note returned stating whether or

*I have. in more than one instance, in cases of decided typhoid fever, recognized none of the green precipitate; so that this exception must be borne in mind. In another case, also, in which I got a characteristic reaction, and the surface of the white precipitate had a dirty greenish look. I afterwards detected indican, showing that there are some things not quite certain about this reaction.

not typhoid fever was suspected. In one family a young man well advanced in typhoid fever, with intense ataxic features, seen in the third week, gave no reaction. His urine was dense and highly colored, the typhoid poison was of the malignant sort, for surely there are degrees in the virulency of this poison. Many examinations gave no response, even in the urine drawn in the dying hour. His sister, who had come to nurse him, showed symptoms of the fever, and in the first week we had the distinct characteristic reaction, according exactly with the clinical features of the case. The mother of the young lady who came to nurse her complained of malaise after some weeks of nursing, and her urine gave the diazo-reaction perfectly, and so far in advance of the more serious stage of the fever, that she had sufficient warning to return to her home. This she did, and had a typical case of typhoid fever.

My first two cases were undoubtedly genuine typhoid fever, one of them having all the typical symptoms except marked involvement of the nervous system, particularly distinguished by intestinal hæmorrhage in the third week; another having no ataxic symptoms but running a four week's course, terminatiug with purpura hæmorrhagica. The test was applied in both these cases, but there was no characteristic color reaction because the urine was not taken until too late in the disease, viz: after the fourteenth day.

The next was the case of a friend whom I had treated nineteen years previously for typhoid fever. Holding to the belief that one attack of typhoid exempted permanently. I was puzzled when I observed the case following right on after the typical course of typhoid. Urine was secured at about the end of the first week, and gave the blood red or cherry red reaction for typhoid fever.

Three cases of fever of about the same date, came next under observation, having no well-marked typhoid symptoms, but going on day by day unaffected by medicine, and causing great anxiety. Anxious parents must have a prognosis about their children's fevers, and when, as in some seasonal forms of fever, the wisest man could not forecast a case with any confidence, nor even make a satisfactory diagnosis, it is gratifying to be able to have a recourse to a chemical test, which has some approximation to accuracy. I secured the urine in these cases, and with confidence assured the friends that there was not an element of typhoid in them, an opinion which was confirmed by subsequent observation.

The next case was that of a young lady living in the country, who called me about the end of the first week of fever. Living at a distance it was very desirable that an opinion could be arrived at that would enable me to lay down treatment, and to say definitely what was the matter. Symptoms of typhoid fever were not marked, and nothing but probabilities could be suggested. An examination of the urine gave the characteristic reaction for typhoid fever, a diagnosis borne out by subsequent observation.

Another group of cases: My friend Dr. A. D. McDonald submitted some urine from two patients. The first I could say at once was from a typhoid patient, the second I reported negatively upon, but subsequent examinations as to one of them revealed the intensest reaction of any urine I had tested.

In one case only (at this date only one in 20) was there a complete failure of the reaction, in a clearly defined case of typhoid fever. This case answered to the typical clinical characteristics of the disease, but gave no diazo-reaction; urobilin was abundant at every examination, which does not interfere with the test. I am at a loss to state why there should be one failure if the reaction depends upon a typho-toxin, or a ptomaïne, presuming that such a substance would be a constant factor. It is possible, though, that the prodrome of the fever may escape observation, and the patient be past the period of the critical manifestation before he takes to bed, but our duty is to put these examinations to the severest tests; we are not after an astonishing novelty, but to settle the practical bearing of Ehrlich's discovery.

The testimony is accumulating, and we will soon know the facts:

Dr. Elbridge Culter says of it in the *Boston Medical and Surgical Journal* (December 26th, 1889):

"Writers differ as to the worth of this reaction for diagnostic purposes in typhoid as well as about its prognostic value. On the whole the weight of evidence is rather in its favor and is perhaps perhaps best summed up by Strümpell in the last edition of his text-book, in which he says 'the urine (in typhoid fever) gives almost without exception the Ehrlich diazo-reaction at the height of the disease.' How great its diagnostic value is I have not been able to determine, having made no comparative test. My experience thus far leads me to consider it strong corrobative evidence of typhoid.

The reaction was sought for in every case but three, fifty-three times. It was characteristic or marked forty-nine times. In four cases it was absent. Two of these were very mild cases in young persons and the urine was not examined for it every twenty-four hours. In the third case, a mild one, the patient was sixty-seven years old. The fourth case was convalescent when first seen. In several cases where recrudescence occurred the reaction was found at this time in a moderate degree. In one of the cases of relapse the reaction was extreme, in the others it was moderate."

The latest evidence is from Dr. L. Rütimeyer, in *Correspondenz-Blatt für Schweizer Aerzte* (May 15th, 1890, *Journal American Medical Association*, July 12th, 1890). Some of his conclusions are, that in cases of suspected typhoid if the reaction is present we probably have to do with that condition; if it is absent during the first and second week, we have a very mild case or some other disease. Further, that the amount of reaction does not depend on the intensity of the febrile process. That the disappearance of the reaction in the second and third week ordinarily means an early convalescence or a light course of the disease. Strong and persistent reaction is of no value in determining the probable ending. A recurrence of the disease again shows the reaction, even when it has disappeared.

NOTES ON CASES SINCE ABOVE WAS WRITTEN.

An opportunity was afforded in one case of traumatic tetanus, to test the reaction, but it was negative.

From my note-books I have selected fourteen cases, some of my own and some from medical friends who have submitted specimens from suspected fevers. I am thus enabled to add additional information. In one case of undoubted typhoid fever the reaction was characteristic, but lacking the dull greenish pellicle on the surface of the white precipitate.

In two cases of continued fever in which the attending physicians were in doubt, there was no decided reaction except for bilirubin, but on the other hand there were no characteristic rose-colored spots, no ataxic symptoms, but only indications of mild typhoid.

In one case the reaction on the eighteenth day of fever was characteristic, although the urine was so highly ammoniacal as to necessitate neutralization with acetic acid.

In another case, where the reaction was decided at an early day of fever, the case terminating abruptly by convalescence. Indican was found to be present in the urine, with what chemical effect I do not know.

My conclusions are that there is—

(1) A very considerable degree of reliance to be placed in Ehrlich's test.

(2) It can be said only in a general way that we get the dark dirty green precipitate in typhoid, and its absence cannot always be taken negatively.

(3) Clinical features must always be allowed to have their weight in pronouncing upon the result of any given test, but the test does not vary through nearly so broad a range as the differential features in typhoid and simple continued fevers.

[NOTE.—Only so much of what was a lecture on the subject is given in the above notes, the writer omitting minute detail of cases as unnecessary. Samples of the ingredients necessary for testing urine were distributed at the meeting and since, and the writer will send to any subscriber enough of the chemicals to make a number of trials, on application to him. All he asks is that those who make the tests will make notes as to the day of the disease the urine was examined, if the color reaction was the characteristic red, extending to the foam, and if there was a dull green precipitate. Several reports have come in, but not sufficiently prolonged trial and comparison of cases has been made to answer the requirements of exact science.]

REPORT OF THE CHAIRMAN OF THE SECTION OF MATERIA MEDICA.

By D. G. Caldwell, M.D., Tulen, N. C.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

SULPHONAL.

At the last meeting of this Society Drs. Young and Stevenson, in their report, treated of this new hypnotic at some length. They concluded with these words: "Sulphonal is being investigated by the best men of the world. They seem to be anxious to find merit in it, and are giving it a fair trial; on its worth it must stand or fall, its future time alone can reveal."

Time does not seem to be sustaining all the first claims for this new drug. In an editorial in a recent number of the *Therapeutic Gazette* a note-warning is sounded. "It almost seems that the fate of sulphonal was to be a repetition of what has been so often noticed in new drugs; at first received with universal acclamation to finally become more and more distrusted, and at last discarded as useless. We do not maintain that the latter is to be the fate of sulphonal, but the cases where its results are unsatisfactory, or where its effect is even dangerous, are accumulating only too rapidly."

Dr. Monthyel has recently published a number of observations which are extremely unfavorable to sulphonal, and his results have been recently confirmed by Prof. Mariet *Deutsche Medicinische Wochenschrift*, October 3, 1889). The latter has published an exhaustive essay upon the action of sulphonal, and he found that in doses of 30 grains in only 33 per cent. was the action at all satisfactory; upon the second, third or fourth day, tonic symptoms appeared, so that the use of the remedy had to be suspended; this state of affairs was especially marked when doses of 45 to 60 grains were given to produce sleep. An especially annoying feature in the action of this drug appears to be that, while in some cases large doses may be taken without any effect, in others small doses produce the most violent toxic symptoms; while again even those cases

which in some instances have proved themselves unaffected by large doses and in whom it may have previously produced satisfactory sleep, suddenly will be violently poisoned by doses which they had taken previously with impunity. Exhaustion, diarrhœa, vomiting and collapse follow doses which had been previously almost inactive. In one instance a patient was affected with sudden and violent congestion of the lungs, a fact which is confirmed by experimental observation that the lungs and other viscera are in a state of violent congestion after poisoning with sulphonal. As it is Dr. Mariet no longer attempts to give doses of 60 grains two days in succession, since he is confident that doses which are capable of producing sleep will nearly always produce symptoms of intoxication if persisted in.

Jastrowitz has called attention to the cumulative action of sulphonal, referring to the necessity of interrupting the use of this drug so as to allow for the elimination of successive doses. He also has noticed unfavorable symptoms following the use of sulphonal, such as muscular weakness, disturbance of sight, ringing in the ears and collapse.

Cases of poisoning from small doses of sulphonal are published in the *Medical News*, August 10th, 1889, when there was a fatal issue, and in the *Medical Press*, September 11, 1889, when delirium was produced.

It has been noticed that sulphonal disturbs the cerebral cortical functions producing ataxic movements similar to those produced by the removal of the motor portions of the cerebral cortex.

In the *Lancet*, November, 1889, (*Therapeutic Gazette*, January, 1890), Dr. R. Percy Smith publishes five different cases in which there was temporary loss of power in the lower extremities as a consequence of the administration of sulphonal, 30 grains being the dose usually employed. From a study of these cases Dr. Smith concludes that the loss of power was not due merely to giddiness, but to some interference, probably with the cortical functions. In all the cases the suspension of the administration of the drug was attended with the immediate disappearance of the unpleasant symptoms.

Dr. Knoblauch (*Therapeutische Monatshefte*), November, 1889), the assistant of the neurological clinic in Heidelberg, in an address given before the neurological section of the Association of Naturalists, held in Heidelberg, goes so far as to agree with the statement

of Dr. Monthyel that sulphonal is not a remedy, but a poison, basing his conclusions on the facts observed by himself and others, that in many cases the hypnotic action of sulphonal persists until the following day; that it cannot be evoked with certainty in any given time; that the doses which are sufficient to produce sleep vary in different individuals, and even in the same individual at different times; that in many cases marked symptoms of poisoning occur even with doses which are too small to produce sleep.

At the last annual meeting of the New York Medical Association Dr. W. H. Flint, of New York (the *Therapeutic Gazette*, January, 1890), who seems to have studied this drug more thoroughly than any one else in this country, reiterates his favorable conclusions, saying that sulphonal, even in single doses, 20 to 30 grains, was in the main a safe and reliable hypnotic, free from unpleasant concomitant effects, and usually from all undesirable sequelæ.

Dr. Flint thought sulphonal was chiefly valuable in nervous insomnia, in some forms of insanity, notably in acute maniacal conditions, in acute sthenic febrile conditions, the opium habit, in conditions of gastric irritability, at least temporarily in neurasthenia. The effects of the remedy had generally been better in his experience when the patients were strong and plethoric, and in these cases the after effects were most frequently absent.

Sulphonal was contraindicated because of its comparative uselessness in insomnia from pain, cardiac dyspnœa, gastrectasis and congested stomach.

The causes of this failure in the presence of pain, cough and dyspnœa seemed to be its slight narcotic action, and in gastrectasis, chronic gastritis and gastric congestion its slow solubility. It seemed to be contraindicated on account of its possible hurtful effects in great physical prostration, in acute melancholia and in insanity after abortion and labor, and perhaps in schlerosis and in angina pectoris. Clinically, toxic symptoms did not generally follow the use of sulphonal in adult cases until 30 grains or more had been given at one dose or in doses quickly succeeding each other. It must be conceded, however, that small doses did sometimes act unfavorably, owing to individual idiosyncrasies. Dr. Flint thinks that there is no need for alarm at the sensational statements of some authors who have used too large doses, or have used the drug when it was contraindicated. The dose should be carefully

adjusted to the requirements and peculiarities of each case, and since the effects of a full dose was often felt on the second or third night after its administration, it was well to decrease the dose on these nights whenever the drug must be given uninterruptedly for days or weeks. He had not yet seen evidence that the sulphonal habit existed, nor had he seen any cachexia or dyscrasia which could be fairly attributed to the drug. Favorable effects had resulted in about 80 per cent. of his cases. Children took it readily and tolerated it well.

Reviewing his own experience and that of others, he concluded that the physiological action of sulphonal had not yet been satisfactorily established.

CHLORALAMIDE OR CHLORALFORMAMIDE.

This is the title of one of our new drugs which has lately been added to our already long list of hypnotics. This is a discovery of Prof. Von Menrig. "It is an addition-product of chloral anhydride (CCl_3CHO) and formamide ($CHONH_2$), and its formula is $CCl_3CHOHNHCHO$. It occurs in colorless crystals, soluble in 9 quarts of water and 1½ parts of alcohol (96 per cent.) The flavor is mild, feebly bitter and not at all caustic." (*Year-Book of Treatment*, 1890, p. 301.) The aqueous solution, when heated to 60° C., decomposes into chloral hydrate and formamide. This decomposition is brought about also by alkalies, while dilute acids are without influence.

The first experiments, such as Drs. Rabow, Hagen, Hüfler, Reichman, Peiper, Kny, Hageman and Strauss are all pretty well agreed as to the favorable action of chloralamide as a hypnotic in doses of 30 to 45 grains, especially efficacious in insomnia due to nervousness and to most all cases of sleeplessness which are not due to pain.

The dose is a little larger than that of chloral hydrate, and takes a little longer to take effect, requiring on an average one-half hour, sleep lasting from six to eight hours, being without any unpleasant after-effects. "In Prof. Strümpell's clinic 30 grains were generally found sufficient, especially in women, although occasionally 45 grs. were required, given in capsule or dissolved in water. No disagreeable effect on the heart, respiration, temperature, digestion or kidneys were ever noticed." (*Therapeutic Gazette*, September, 1889.)

The most careful study of the action of chloralamide is that of Dr. Eugene Kny, of Strausburg, who has tested its action on man, having administered it one hundred times in 31 cases. (*Hand-Book of Treatment*, 1890, p. 301.)

The dose varied from 1½ to 4 grains (22 to 62 grains). Speaking generally, it is suitable to the same class of cases of insomnia as chloral. Chloralamide is so unirritating that a 10 per cent. solution causes no irritation when applied inside the eye-lid of a rabbit, and it can be taken by patient's in powder directly, or in wine, without risk of offending or disturbing a sensitive stomach. The most striking advantage of chloralamide is this: that even in deep narcosis the circulation suffers no embarrassment, either central or peripheral.

Dr. Kny published his experiments in the *Therapeutische Monatshefte*, August, 1889, and quoted in the *Therapeutic Gazette*, October, 1889, as to the effect of chloralamide on the circulation.

From experiments made on rabbits, which had received 24 to 30 grains of chloralamide by stomach, the author determined that in comparison to chloral the influence of chloralamide on the circulation is insignificant. The effects of chloral introduced into the stomach was to reduce the blood-pressure in the rabbit from 50 to 80 millimeters below the level before the experiment; while chloralamide, on the other hand, only produced a fall of 17 millimeters, or not more than might be expected to occur in normal sleep.

The action of chloralamide is explained by Dr. Kny as due to the fact that from the free alkali of the circulating blood the chloralamide is gradually split up into chloral and formamide, and thus but small quantities of chloral become effective at any one time. This statement, the author informs us, is confirmed by the fact that he was able to detect large amounts of uro-chloralic acid in the urine of a dog which had taken 180 grains of chloralamide.

A point which seems to be much in favor of the use of chloralamide is that formamide acts as a stimulant to the vaso-motor centre in the medulla, and thus tends to elevate blood-pressure. Dr. Kny prefers chloralamide to sulphonal principally upon the testimony of the patients themselves, and upon the fact that it is much more rapid in its action.

If the claims which are set forth for this new drug, as to its pleasant effect on the stomach, its activity as a hypnotic and its

freedom from danger on the circulation are confirmed, it is certainly a valuable addition to our Materia Medica.

URAL OR URALIUM.

According to the *Druggist's Circular and Chemical Gazette*, July, 1889, Ural is the name of a new hypnotic described by Poppi. This is a combination of chloral hydrate and urethan. It is said to bring on a quiet, long-continued slumber, and to act more speedily than any other hypnotic. The usual claim is also made that it is "without any unpleasant after-effects." This is qualified by the admission that it lowers blood-pressure in excessive doses. The editor adds that the action of chloral is well-known, and it is not likely that this mixture or any other hypnotic will fill the long-felt want as to safety. Ural occurs in the form of bitter crystals, soluble in alcohol, but slightly so in water. Dr. Poppi, after farther researches, communicates his results to the *Pharmaceutishe Post*, July, 1889. He claims that ural is less dangerous than chloral, from the fact that it reduces temperature to a less degree, and has scarcely any effect on the vascular system. Dr. Poppi himself has taken 15 to 30 grains in the evening, his pulse being increased only from 75 to 80 beats in the minute. There was marked somnolence, but the duration of the sleep produced was no longer than usual, and on awaking there was a slight sensation of fatigue, which rapidly disappeared. The author claims to have given ural to a large number of cases, inebriates, phthisical cases, and cases of heart disease, and various affections of the nervous system, in doses of 30 to 45 grains, and has almost invariably succeeded in producing sleep; and when repeated on a number of different occasions, the blood-pressure was not reduced either in healthy individuals, or in patients to whom it was given to overcome insomnia.

Ural does not seem to have been used very extensively up to this time, the writer has seen no reports from any American authors.

SOMNAL.

Somnal is composed of chloral, alcohol and urethan. The formula being given as $C_7H_{12}Cl_3O_3N$. It differs from its predecessor, chloral-urethan, in containing a larger proportion of carbon and hydrogen. (*Druggist's Circular and Chemical Gazette*, December, 1889.)

It has been used in doses of 30 grains in the form of a solution sweetened with syrup. It is claimed by the author (Dr. Radlauer) to exercise no unfavorable action upon the pulse respiration or temperature. But this statement is not borne out by clinical tests. Such experimenters as Professors Leibreich and Fübringer have found that somnal exerts a hypnotic action in about 30 per cent. of cases, and that it has a very undesirable, and occasionally even dangerous, secondary action on the heart.

From the lights we have before us we conclude that somnal does not fulfill the requirements of a good hypnotic which should possess certainty, promptitude and freedom from unpleasant after-effects.

METHYLACETANILIDE.

This new anodyne was first called attention to in March, 1889, by Drs. Dujardin-Beaumetz and Bardet, and was called "ortho-methylacetanilide." This nomenclature was called in question by M. Giraud, who says its true designation is methylacetanilide. In a recent lecture of Professor Dujardin-Beaumetz on the new analgesics (*Therapeutic Gazette*, December, 1889), he says: "We had some difficulty at first in being settled about the chemical substance with which we were experimenting; but after the remarks of Giraud following our communication, it became certain that we had to do with methylacetanilide, which was obtained in 1874 by Hoffman."

Acetanilide furnishes four methyl derivatives which are, methyl-acetanilide and ortho-, meta-, and para-acetanilide. Methylacetanilide, which has the formula $C_9H_{11}NO$, results from the action of chloride of acetyl on mono-methyl-aniline. It presents itself in the form of beautiful colorless crystals, little soluble in water, but very soluble in alcohol and even in dilute spirit; has neither taste nor smell. This drug, like the other derivatives of the aromatic series, is anti-septic, anti-thermic and analgesic. It is mostly used for this latter property; it takes its empirical name *exalgine* from this quality.

As to the clinical and therapeutic application of exalgine, Dr. Gaudineau sums up his conclusions as follows (*Therapeutic Gazette*, November, 1889):

(1) Exalgine, given in doses of from 3 to 6 grains, if the subject is non-febrile, is without effect ordinarily.

(2) Doses of 4 to 6 or 12 grains modify considerably the pain experienced by the patient suffering from neuralgia or any painful affection.

(3) Exalgine is poisonous when administered in doses equivalent to 7 grains for every two pounds of body weight, so that in ordinary therapeutic doses it may be stated to be absolutely inoffensive, and that this new remedy is less dangerous than aconitine, digitaline and all the alkaloids frequently given to patients.

(4) The therapeutic dose varies from 4 to 12 grains administered in the twenty-four hours.

(5) In these doses exalgine has never produced any trouble other than slight vertigo and ringing in the ears.

(6) Exalgine is especially valuable from the fact that it does not irritate the stomach and that the doses required are small.

The analgesic effects of exalgine are especially evident in the treatment of neuralgia, and to a less reliable degree in the treatment of pains of a rheumatic character.

Dr. Bardet, of Paris, at the International Congress of Therapeutics, read statistics from the Cochin Hospital, where exalgine was administered in 75 cases. These showed the drug to be especially beneficial in dental and congestive neuralgias and congestive hemicrania. At the same meeting Dr. Desnos, of Paris, said that he preferred exalgine to antipyrine. Yet he admitted that exalgine was apt to cause vertigo, a sort of drunkenness like quinine, an opinion which Dr. Beaumetz confirmed, stating that the symptoms have no dangerous sequelæ, eruptions and cyanosis are not to be found.

Dr. Beaumetz in his second lecture on "New Therapeutic Agencies" (*Therapeutic Gazette*, December, 1889), delivered in Cochin Hospital, says: "Exalgine has shown itself to be a powerful analgesic, and in the numerous cases where we have employed it it has furnished us remarkable results, often superior to those of antipyrine and acetanilide. I possess two or three very demonstrative observations in this regard. I have seen methylacetanilide subdue pains which had resisted all other analgesics, and this in doses which had not exceeded 50 to 60 centigrams in twenty-four hours. It is this elective action of methylacetanilide on pain which has given the name of exalgine to this substance, but its therapeutic effects go farther, and show an action quite selective on the rachidian

bulb. Hence it is a medicament which is applicable to polyuria like antipyrine. Lastly, it combats convulsive symptoms, and perhaps epilepsy."

In comparing together the new analgesic antithermic agents in the treatment of affections of the nervous system Dr. Dujardin-Beaumetz says: "Of all the antithermic analgesics known, that which occupies the first rank is antipyrine, and for the following reasons: It is the most soluble, perhaps the only one soluble, in all proportions in water, which renders its administration and absorption very easy; moreover, it is but little tonic.

After antipyrine, and almost at an equal rank from an analgesic point of view, I place methylacetanilide, and if this methyl compound were more soluble, it would certainly deserve to occupy the first place, and this because it is more active, and because under its influence we have never seen an eruption appear. After exalgine I would place phenacetine, whose great insolubility gives it a rank inferior to that of antipyrine and methylacetanilide. I put in the last place acetanilide, not because this medicament is less powerful than the others, quite the contrary, but because it sometimes produces a cyanosis which frightens the patient and his attendants."

The favorite formulæ of Dr. Dujardin-Beaumetz for administering exalgine are—

℞.—Exalgine.....2.50
Essence peppermint.....10
Linden water.....120
Syrup of orange flowers.....30

If this be not agreeable, then—

℞.—Exalgine.....2.50
Tincture of orange-peel.....1
Water.....120
Syrup of bitter orange.....30

A teaspoonful of either of the above potions contains 25 centigrammes (4 grains) of exalgine, and you will prescribe a teaspoonful morning and evening. The tincture and the alcoholate serve only to dissolve the exalgine, and this is the first thing to do in the preparation, before adding the other ingredients.

METHACETIN.

This is a new antipyretic and one of the most recent additions to our rapidly growing list of synthetic medicinal compounds. This is a powder consisting of reddish scales without odor and slightly bitter to the taste; slightly soluble in water, but very soluble in alcohol. This is the methyl homologue of phenacetin.

Methacetin is $C^6H^4OCH^3NHC^2H^3O$, and phenacetin is $C_6H^4OC^2H^5NHC^2H^3O$. It seems that this is a more soluble body than phenacetin, with which it agrees in physiological action.

It may be given to children to reduce pyrexia in doses of 20 to 30 centigrammes. From experiments on animals it has been found that methacetin reduces the temperature three, four or five degrees within a few hours after its administration. Dr. Edward N. Whittier, of Boston, in writing of antipyretics in the *Boston Medical and Surgical Journal*, says that methacetin is an efficient antipyretic, causing a fall of three to five degrees in a few hours, and frequently a profuse perspiration. It may produce collapse, but so far no cases of vomiting, tinnitus aurium or erythema have been reported. It is markedly poisonous to rabbits, doses of 45 grains having produced convulsions and death. Dr. Whittier concludes: "Experience of methacetin is still limited, but its poisonous action on animals and its tendency to produce collapse in man do not recommend it. (N. C. Med. Journal, November, 1889.)

GUAFINE—A NEW ANTIPYRETIC.

Dr. L. Bertrand (*Medical News*, August, 1889, from *Bolletino Farmaceutico*, July, 1889) gives the results of his experiments with guafine. It is a resin which Bertrand extracted from the leaves of *Psidium pyriferom*, a tree belonging to the Myetaceæ, and indigenous to the East Indies and South America. The leaves contain tannin and oxalate of lime, and only 2 per cent. of the resin. The results of numerous experiments proved that guafine was of considerable value in intermittent fevers. (From the *Year-Book of Treatment*, 1890.)

BENZANILIDE.

Benzanilide (*Year-Book of Treatment*, 1890) is a white crystaline powder, sparingly soluble in water, soluble in alcohol. Kahn

has employed this drug in a great number of febrile diseases in children. It is easily taken and well borne. As Kahn and Hepp have shown, benzanilide is an energetic antipyretic, acting similarly to acetanilide. The doses are 1 to 2 decigrams (1½ to 3 grains) for children under 3 years of age, up to 9 years for older children. The maximum dose in twenty-four hours was 50 grains. Roughly speaking, the dose may be said to be twice that of acetanilide.

HYDROXLAMINE NH_2OH.

Also called oxyammonia. This is a base in which one atom of hydrogen of ammonia is replaced by the hydroxyl group. Like ammonia, it has the peculiarity of readily entering into combination with hydrochloric acid, forming the hydrochlorate (NH_2OHHCl), which is the most important salt. This occurs in colorless crystals freely soluble in water, glycerine and alcohol.

Hydroxlamine was discovered by the chemist Lossen in 1865, but not until Dr. Bintz in 1888 studied and reported the physiological effects of this drug on the lower animals was much attention given to it. In these experiments the physiological action of hydroxlamine so closely resembled that of pyrogallic acid, chrysarobin, anarobin and allied substances which have been found serviceable in the treatment of psoriasis, that he suggested its use in skin affections. These suggestions led to trials of the drug by German dermatologists.

Dr. John Faby, as referred to in the *Therapeutic Gazette*, September, 1889, found that a 10 per cent. solution is excessively irritant to almost all skins, causing intense redness, violent burning, and not rarely blistering the part. Some skins will not bear a 1 per cent. solution, so that it is not safe in a new case to begin with a stronger application. The solution should be gradually increased and be applied at intervals of one, two or three days, according to its effects. In the cases studied by Faby the results were most favorable. One very severe case of chronic psoriasis which had resisted other treatment, had the ordinary solution of pyrogallic acid applied to one arm, to the other the solution of hydroxlamine, at first the arm treated with the acid appeared to improve most rapidly, but in a few days the other arm overtook and passed it on the road to recovery, and was well sometime before the other.

Others have reported good results from the remedy in lupus, herpes, tonsurans and parasitic sycosis. The great advantage claimed for this drug over that of pyrogallic acid and chrysarobin in dermatological practice is that it does not stain the skin and is free from dyeing.

SOLVINE.

This is the name given a new product which is produced by mixing sulphuric acid and castor-oil. The excess of acid is removed, the residue dissolved in water and the precipitate treated with a mineral acid. The liquid which results is said to be of a clear yellow color and oleaginous consistence. It is claimed that this substance possesses marked solvent properties, passing readily through animal and vegetable membranes.

Toxic symptoms have been reported to have followed on application of napthol and solvine to the mucous membrane, and as solvine is known to dissolve red blood globules when injected hypodermically, it must be used with caution even as a component part of ointments for the skin until further and more careful clinical studies are made with it.

COCILLANA.

This plant has lately been called attention to as an expectorant, tonic and laxative. Dr. H. H. Rusby, in 1888, described a drug which he had discovered to be in common use in Bolivia, of which country the plant is a native. It appeared to possess emetic, cathartic and expectorant properties very similar to ipecac. Dr. David H. Stewart, in *Philadelphia Medical News*, August, 1889, published his results in 40 cases in which cocillana was prescribed. these comprise 10 of acute, 1 of sub-acute and 19 of chronic bronchitis, 5 of broncho-pneumonia and 5 of phthisis. His conclusions, in brief, were that, in acute bronchitis, the drug had but little effect on the disease, but in chronic bronchitis the results were more satisfactory, 5 cases being cured, while 3 were decidedly and 2 moderately benefited. All the cases of broncho-pneumonia were improved as regards cough and expectoration, while the cases of phthisis appeared to be uninfluenced by cocillana. In all cases treated Dr. Stewart claimed that when cough was not removed it was lessened, while expetoration was either diminished in amount or frequency and became less difficult.

In December, 1889, Dr. R. W. Wilcox delivered before the New York Academy of Medicine an address on cocillana (published in the *Boston Medical and Surgical Journal*, January, 1890). In his experiments Dr. Wilcox used the concentrated tincture, though he adds that he believes the fluid extract in doses of 5 to 25 ♏. would be preferable on account of the absence of alcohol. His experiments, like those of Dr. Stewart's, proved that the field of usefulness of cocillana was in sub-acute and chronic dry bronchitis. Dr. Wilcox stated that its expectorant effect was more sure than either apomorphia or ipecac in liquefying bronchial mucus, that it increases the appetite, and that it acted, to some extent, as a laxative, all of which rendered it a most useful remedy. In senile bronchitis Dr. Wilcox would use with caution, particularly in cases of calcified cartilage and when there is a tendency to bronchorrhœa, because cocillana is not a stimulant to the respiratory centre. Dr. Rusby, who was present at this meeting, added to the valuable testimony of Dr. Wilcox in favor of this new drug. In speaking of its use in bronchitis, Dr. Rusby stated that one of its most important offices he believed to be that of promoting the appetite. This was among its earliest and most marked effects, and he believed that its use in doses of 10 to 15 ♏. an hour before meals was plainly indicated independently for this purpose.

Should further experience substantiate what is claimed for this new remedy, particularly its pleasant effect on the alimentary canal in contrast to that of most of our expectorant remedies, most of which are more or less nauseating and destructive of the appetite, we may well congratulate ourselves on such a valuable addition to our medical armamentarium.

A CASE OF EXTRAUTERINE PREGNANCY OF FIVE YEARS STANDING.

By W. S. Anderson, M.D., Wilson, N. C.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

About November 1st, 1889, I was called to see Laura Harris (colored), aged 35 years, who informed me that she had from time to time passed small pieces of bone from her urethra. Upon further inquiry, she said that five years before she came to my office and that I told her she was pregnant, but had given birth to no child since. I made a digital examination per vaginam and rectum, and found what I thought to be a case of extrauterine pregnancy of long-standing. I had forgotten the case, but on my return home I examined my books and found that on the 17th of October, 1884, she visited my office, and that I made a digital examination, but had no other record of the case.

She had suffered a great deal during the years she had carried the fœtus, and was very weak and emaciated. I put her at once on a good nutritious diet and tonics to prepare her for an operation, which I performed on the 21st of October, 1889, assisted by Drs. R. W. King, J. K. Ruffin and my brother, Dr. Albert Anderson.

For the first few visits I made her previous to the operation the mass pressed so low down I thought it would be better to operate through the vagina, but when the time came for the operation it was so high up it could not be reached through the vagina, and I performed laparotomy, which was done in the usual way.

After passing into the abdominal cavity it was found that the sack holding the dead fœtus was very much thickened with extensive adhesions, except one small place on the upper surface corresponding with the abdominal incision. Finding it impossible to remove the whole mass, on account of the adhesions, we decided to puncture the sack, remove its contents and leave it to nature, assisted by the strictest antiseptic treatment. In closing the abdominal wound we stitched the sack to the edges of the abdominal incision as best we could, put in a drainage-tube at the lower angle, and closed the wound and dressed it with iodoform gauze. She

rallied very promptly from the anæsthesia, and expressed herself as feeling more comfortable than for a long while.

My brother and myself visited her together for several days, and one or the other of us for twenty-three days, and, notwithstanding the fistulous opening into the bladder, through which a good deal of pus was discharged, and the large amount discharged through the abdominal incision, everything looked toward a favorable termination. We felt so confident of this we left her in the care of her husband and mother, who had been thoroughly drilled in the manner of cleansing and dressing the wound.

Her temperature never went above 101½° nor below 98° during the twenty-three days we visited her. One thing noticeable in regard to the temperature and pulse was, when it was above normal the dressing of the wound would bring the temperature down from ¼° to ½°, and the pulse from 2 to 5 beats per minute; and if it was below normal it would go up in the same proportion.

She lived four weeks after we discontinued our visits, and died of prostration.

THE CASE OF THE INSANE OF OUR STATE OUTSIDE OF THE ASYLUMS.

By James A. Hodges, M.D., Fayetteville, Member of the North Carolina Board of Health.

(Read before the Medical Society of North Carolina at Oxford, May 27th, 1890.

For the care and cure of the insane in our State there exist three Asylums—two for the white and one for the colored population.

These institutions in the past have accomplished a grand and beneficent work for humanity. As far as their limited capacities would allow, they have done much to relieve the sum of human misery, especially that most dreadful form in which reason is dethroned and the passions have supreme sway, and in which that most sensitive and complex organ of the body, the brain, is the one diseased.

The value of asylum treatment cannot be estimated. Insanity is the most distressing disease that is known to man, and the most far-reaching in its dangerous and damaging effects upon society at large. When a cure is effected the results are perceptible and easily recognizable by all, but the benefits, both direct and indirect, accruing to those whose minds are more darkly shrouded and upon whom the sunlight of reason may never break to dispel the dark midnight of gloom, are incalculable and all but incomprehensible. In the environments of a well-ordered institution the laws of hygiene are intelligently and rigorously enforced, good air, good water, good food, sunlight and cleanliness are all secured and maintained.

The treatment pursued is under the supervision of skilled alienists assisted by experienced attendants. As a result, the physical powers are kept at their highest standard, and, consequently, the nutritive disorders of the brain are likely to be vastly and permanently improved. By well-directed regulations and in well-appointed apartments, the poor sufferer, sick in mind and body, is soothed and quieted, his pain assuaged and his specters banished. Likewise the bereaved and sympathizing friends at home are relieved of care and trouble and anxiety, for they are conscious that, under the protection of the Asylum, the tottering and enfeebled intellect of their

quondam patient is being skilfully and intelligently treated; that his weak and diseased body is being cared for; that the possibility of accident or crime will be prevented, and that, if possible, renewed life and vigor and perception will be instilled into that once dull and leaden brain, and the glad light of reason and intelligence once more flood that suffering soul.

Since the establishment of the North Carolina Insane Asylum, the oldest of our institutions, there have been, according to their last report, 540 recoveries recorded among its patients. These, if left to themselves in their state of mental aberration, according to the usual reckoning, would have dragged out an average of seventeen years of useless existence, entailing upon the State, the county or personal friends the aggregate of 10,000 years of misery and insanity to be paid for out of somebody's wealth! On the other hand, being cured, 16,000 years of usefulness, allowing an average of twenty-nine years, according to statistics, after recovery to each patient, has been gained and will be preserved for the benefits and uses of society. In addition to this number of 540 who have been restored to society, and thus made producers and tax-payers, instead of encumbrances, as formerly, fully one-half as many more have been returned to their homes improved in bodily and mental health.

These, gentlemen, are some of the advantages and benefits resulting from Asylum care and treatment. But under the present regime in our State the largest number of our insane population are not cared for in properly constituted asylums, but are detained in the county jails and poor houses, and it is our duty to enquire into the conditions there surrounding them and the methods there practiced in their care and treatment.

The jails, as all are well aware, are ill-adapted for the purposes of an asylum, and, to the credit of humanity and the spirit of the age, be it said, that only urgent cases are confined in them, and for the shortest possible time consistent with the circumstances. The poor houses are more extensively used for asylum purposes, and, taken collectively all over the State, they present a vivid picture of misery and horror. As a class, they are a disgrace to civilization and humanity, and could more properly be designated as *pest houses.*

In most cases the buildings are dilapidated, cheerless and poorly lighted, constructed without plan, and patched by additions and

repairs. It is to be regretted that such squalid institutions should ever be allowed the custody of the insane even for one moment.

In the common diseases to which "flesh is heir" there are known in our present state of knowledge, three classes, according to the results of therapeusis: First, those forms of disease whose tendency is to recover without treatment, or in spite of bad treatment; second, those which are incapable of cure by any known methods of treatment; and third, a small number of cases which depend solely on the treatment. If this be true of diseases as seen in every day practice, how much truer must it be of diseases of the mind, where the body's most highly delicate and sensitive organ is implicated; and what hope of benefiting, much less curing these mental diseases, is there to be held out to these suffering ones, especially under such circumstances and in such surroundings as are offered in county poor houses? What are the facts, then, as regards the care and treatment of the insane in these institutions?

1. There is no system of classification as to the kind or degree of mental derangement. The patients are thrust away by themselves into wretched outbuildings, and are herded together as so many beasts of the field—the curable and the incurable, the harmless and the violent; the one by association with the other delaying each other's recuperation and recovery. The filthy are, too, often thrown with the decent, the aged and enfeebled with the young and strong; and if, as a result, a patient is found with a broken limb or blackened eye, no cause for it is assigned and no record is kept!

2. No alienists are connected with these institutions. The patients, while needing constant medical care and attention, are only visited once a week, or month, perhaps, by under-paid physicians, whose salaries, according to the State Board of Health, average less than $300 per annum, and besides these duties they are expected to attend, free of charge, all indigent suppliants who may desire their services.

3. The attendance is insufficient and inexperienced. The number of attendants will average one to every twenty patients in the poor houses; but this does not represent the actual state of affairs, even, for generally the only attendants are the more active and able-bodied paupers who often perform their enforced duties in an unintelligent manner and always grudgingly, because they feel and recognize that the duties are an imposition. The quality of this service should be

of a superior order, for most cases require constant care and attention, and this does not apply to the dangerous and destructive cases only, but to the broken-down and enfeebled as well. As a consequence of this arrangement but little attention is given to the patients during the day and no supervision at all is exercised at night; for, retiring to their own apartments, which are far removed from this "madding crowd," the attendants wrap the drapery of their couch about them and lie down to pleasant dreams, oblivious of the shrieks and frenzies of these unfortunates, to whose fevered brains "nature's sweet restorer" never comes to soothe and quiet by her gentle wooings.

This lack of humanity requires no comment; *it is disgraceful beyond palliation!*

4. There are no hospital arrangements. Every well-appointed institution for the care of the insane should have proper accommodations for the acutely sick as well as facilities for bathing, together with means of occupation and amusement. In the county poor houses no especial care is given to the sick. It is sufficient excuse for the heartless attendants to know that their patients are under the ban of mental disease, and that their minds are too feeble to take cognizance of the sorrowings or note the lack of attention. They console themselves with the comforting thought that, being insane, the patient can never recover, and they thus preserve a "masterly inactivity," stopping their ears and closing their eyes to the agonies of sorrow and suffering all about them. In the matter of bathing, it is a recognized necessity that there should be an abundant supply of pure water in every asylum where the insane are confined; yet, as a matter of fact, this is a point in the treatment of lunatics in county asylums which is essentially defective. As insane people frequently suffer from ulcerations of the body and other skin affections, cleanliness is imperatively necessary, but, instead, the repulsiveness of the filth too often seen is horrible to look upon. What Superintendent of Health in this audience can say truthfully to-day that he has one single raving lunatic in his county asylum under his charge that is as neat and cleanly as he should be, if comfort and health are to be promoted thereby?

5. There are no proper sleeping accommodations. Insane people require more sleep than persons of healthy minds; but in our county institutions this desideratum is incapable of being realized, first, on

account, oftentimes, of the noisy surroundings, and secondly, because of the uncomfortable arrangements for sleeping. The hard bare floor too often suffices, alas! for pillowing the aching head and resting the cramped and tortured limbs; and if there be any beds, these are generally the homes of countless hordes of vermin, and too vile for description.

6. There are no adequate heating facilities. But few counties have devised adequate means for distributing heat in the wards of the insane patients that are confined, and, as a result, some, if not all of them, being ill-nourished, poorly clothed and helpless by reason of physical infirmities and mental weakness to aid themselves, must suffer in the miserable apartments, provided the pangs of an unutterable existence, exposed as they are to the cold blasts of winter's storms and tempests.

7. There is no regular dietary prescribed. The food which these poor wretches are expected to eat is oftentimes abominable, and it is a known fact that a wholesome and nutritious diet is of the greatest importance in the treatment of the insane. Besides, the food furnished is often regulated for those who are well and sick alike by some attendant of the poor house, or perhaps even by the cook of the institution! It is thrust through an opening into the cell, it may be, and left there to be consumed or not, at the will of the babbling maniac or helpless imbecile! Salt pork is allowed once or twice a day, salt mackarel once or twice a month, perhaps, throughout the year, with a little rice or beef occasionally as a toothsome *entrée!*

Despite the fact that farms are attached to most of the poor houses, vegetables are not grown in sufficient quantity or variety to offset this hard diet.

The sole object of the Superintendent seems to be to screw down expenses, and thus curry favor with the county commissioners, even if his poor and feeble charges do suffer and starve!

8. There is no suitable provision for refractory patients. The dominant idea seems to prevail in these institutions that all being alike bereft of reason, all should receive the same routine treatment. However, it sometimes occurs that the more violent have to be more forcibly restrained, and these are either confined in a jail or darkened cell. Restraint is applied at the will of an untrained attend-

ant when in his judgment it is deemed necessary. This sounds like a tale of feudal times, but it is true, nevertheless.

"Does the patient disturb others?" then the mandate goes forth, "narcotize him, or muzzle, or manacle him." If that be impossible, he is very probably removed to the jail building, where others like himself are confined in the various stages of insanity, and where the genius of Pandemonium reigns supreme. There, his sick and fevered brain, haunted before only by his own phantasmagoria, "beholds now materialized the most hideous spectres of his imagination." And it is doubtful, indeed, if any one in wildest delirium has ever seen aught to compare with the waking nightmares experienced in some of these poor house jails.

Such, gentlemen, are some of the evils in county asylums as illustrated in some of our poor houses. This picture is not overdrawn, but its every feature and outline is perfect, and is fashioned without an artist's skill from the scenes of real life as portrayed in our county institutions. Here all laws of hygiene are disregarded, and no attempt at proper treatment even undertaken—all are treated alike, and the wild maniac, the unkempt epileptic as well as the chronic incurable, are all subjected to the same condition and surroundings, each constantly a hindrance to the other in improvement and restoration to health. Above all, the greatest sin and crime that can be attached to these institutions, as they now exist, is that acute curable cases, those which under proper and skilled treatment would recover in from three weeks to three months, are here detained until, by association, they are placed beyond the pale of curability. Who among you has ever known a case of insanity, of any kind or degree, to recover after being entrusted to one of these institutions? I ask you, who?

To the shame of the State, also, be it known that many insane have been detained in the walls of these asylums for long years, either from ignorance or neglect on the part of the attendants or superintendents, one case in my knowledge languishing in the county institutions for thirteen years before being sent to the asylum for treatment.

From the above it is evident, then, that in the asylums already existing, and in the county institutions as at present administered, there are grievous evils. What are these evils? (1) Overcrowding in the State asylums, and (2) as a result, the detention of insane

patients in jails and poor houses. How can the first evil, and, as a natural consequence, the second, be explained? Simply and solely because of the State's brutal parsimony in the past in not providing needful buildings for the reception and treatment of its increasing insane population.

Is there now only necessity for this step? Let the records speak for themselves. The three existing asylums in this State are capable of treating comfortably and skilfully about 900 patients. To the Western Asylum are assigned 40 counties, and to the North Carolina Asylum, at Raleigh, 56 counties—in this latter division, known as the Eastern Division of the State, there are said to be, according to the last report of the President of the Board of Directors of the Raleigh Asylum, about 1,000 white insane, while the Asylum is only capable of treating, at most, 250 patients. There are, consequently, in this Division alone, four times as many white insane, not to mention the colored, unprovided for as are now cared for by the State in this Asylum; or in this division alone equally as many as are now in all the asylums. It is a fact, too, that in all of the asylums nearly three-fourths of the patients are chronic cases who thus occupy the wards to the exclusion of others who might fill their places and again become producers and tax-payers. From some of these institutions, as a consequence, comes to us the reply with every new application, be it urgent or not, that they are overcrowded, and that our patient must wait, yes, wait and die perhaps; or, what is worse, sink into incurable insanity with its attendant train of living miseries! These are startling facts and must fill every right-thinking citizen's mind with shame as well as anxious thought and enquiry. It shows, beyond all dispute, that the State is not doing her duty towards her helpless insane, and that the largest number of this unfortunate class are now unprovided for, except in the most frugal and parsimonious manner, as proved by the system of county asylums, of which we have spoken.

The recent action of the Executive Committee of the North Carolina Insane Asylum in ordering the county officers, according to law, to remove their harmless and incurable insane from that Asylum, will be a telling object lesson to the citizens of this State. It is true that we recognize the justice of such an action by the officials, but it is nevertheless a crying disgrace to our State and its advancing civilization that there was need for such action, and that

the legislators in the past, in their short-sighted wisdom, ever attempted to remedy *such* evils as the existing ones in *such* a manner. The ignorance and inhumanity of the State in this matter will be seen and felt as never before, and a loud cry of indignation will go up all over this land against the State government, which has failed in the past to give relief, and which to-day can consequently present no solution of this important subject, for it has no policy outlined except the despicable one just mentioned, and can offer no provision to meet the growing requirements of this class of its unfortunates who have equal rights with all other citizens of their State. What shall be the remedy?

The only remedy now remaining for this evil of "overcrowding" in the asylums, and consequently the necessary detention of the insane in the county poor houses, is to educate the masses to the existing state of affairs and to demand of the coming Legislature the State's aid in erecting more commodious apartments, so that all sufferers from mental diseases may have like advantages of skilled treatment and supervision.

As I have already endeavored, in a general way, to show you, the present system of detaining the insane in jails and poor houses, which for better means is at present our only reason, is attended with many and grievous evils. That you may know more concisely and accurately the present status of affairs, and may more readily perceive the necessity of enlarged capacity in asylum treatment and more pertinently judge that the whole system of county charity, like that of the State, is based upon a niggardly and parsimonious economy, I would invite your attention to the following statistics as collected and compiled by my friend, Capt. John B. Broadfoot, of Fayetteville, a director in the North Carolina Insane Asylum, and a young man who, having recognized the necessity of this unfortunate class of our population, and being zealous of having some wise and humane provision made for them, is the first to get absolutely accurate information on this subject. The result of his labors, as thus far completed, I will now present:

Forty-three counties were heard from, and the total number of insane in them, outside of the asylums, as reported, was 373, or an average of 8½ to the county. This is certainly a low estimate, for nearly every correspondent wrote that they had no means of determining the exact number, but would report only those cases which

had come under their personal notice, which was always, of course, but a part of the whole. According to the same ratio the 96 counties would contain 816 insane outside of the State asylums. The largest number were in Johnston, 26; the next largest number were in Union, 24; several have from 15 to 20. Ashe, Burke, Clay, Davidson and Pamlico have none. The western counties report the smallest number. The insane in these counties are distributed as follows: In poor houses, 140; in jails, 17; outside of county institutions, 216. According to sex: Males, 181; females, 192. According to race: Whites, 258; colored, 115. Macon and Clay have no poor houses.

He also submitted the three following questions:

1. Average duration of confinement of insane in county institutions? The replies to this question were so unsatisfactory that no satisfactory average could be arrived at, no records having been kept in many instances. From statistics received, however, we infer that eight years is the average duration of confinement.

2. Have you the proper means of confining and treating the insane? To this question every county heard from answers, emphatically, "No!" except Watauga, whose Superintendent of Health answers, "Yes," and that the *per capita* cost of maintaining the insane in his county is $48 per annum; that is, $4.00 per month, $1.00 per week, or 14 cents per day—think of it! Does it not seem incredible that a human being could be lodged, clothed, cared for and fed for a twelve month on so small an amount? Your horse, indeed, could not be stabled for twice that sum.

The replies to some of these circulars are revelations, indeed, and the tale of agony told is all but heartrending. Listen, for instance, to the following: "We have tried to get some of those at large into the asylum, but have failed. Those who are at large are treated mostly by myself without compensation—is it right?" Or listen to this: "We haven't any insane in jail or asylums from the fact that commissioners will not allow a physician any fee for examining insane patients, and they cannot be admitted without examination. I have been informed that in one instance an insane patient was charged with larceny in order to have him admitted and confined in jail. Our insane are sadly neglected. I have reported only one case, but I have no doubt there are several cases, but *as they do not receive any attention* they are not reported." Or another: "There

are at present no lunatics in the jail—until this year from 1 to 3. They are confined in a small log house with no windows and no heat; have seen one poor fellow nude in the coldest weather without any means of heating his room; I remember one case where they had no room in the poor house and the Superintendent chained the patient to a staple in the centre of a room by the leg, and as a consequence she suffered with sores to her death."

3. What is the average cost of maintenance in county institutions? From the statistics received the average cost of maintenance in county institutions per year was found to be $85.78. These figures are suggestive, and while they give the lowest possible estimates in every case, still the information is startling, indeed. They prove, in the first place, that the insane already provided for by the State, numbering 900, are less in number than those unprovided for, amounting to over 1,000; and in the second place, that the average cost of maintenance in the county institutions, which is $85.78, is owing to cruel parsimony; but small as this amount appears at first view, it is yet a large expenditure *per capita* in comparison with the general average of the three asylums in this State, which is $168.08, when it is considered what are the comparative benefits gained in the two systems, the former. i. e., the county cost, being almost solely for food, while the latter, i. e., the asylum cost, includes not only food, but skilled treatment and attention with all their blessings. The mere cost of food in the State asylums is as little, if not less, than the estimated cost in county institutions.

If the *per capita* cost of $85.78 in the county system be compared with the *per capita* cost of the Goldsboro Asylum, for instance, which, although for the negro population, still has all the asylum advantages, and which is but $116.75, it will be seen that there is an excess of but about $30 per annum; or, to put it differently, the cost *per capita* in the Goldsboro Asylum is $9.75 per month, which includes all the benefits and privileges of asylum treatment, against $7.50 *per capita* per month in the county institutions with no treatment nor privileges nor comforts at all.

The comparative average cost of similar institutions in New York State is $18 *per capita* per month in the asylums, against $6.80 *per capita* per mo[illegible] in the county institutions. Without further amplification, I [illegible] you to the consideration of these facts and figures, that you may determine in your own minds which of the

two systems, both costing about the same, all things being included, is to be preferred.

As a matter in near relation to this subject, I would also bring to your attention the fact that two other classes of our population are not properly provided for by law, namely, inebriates and idiots. The former can only be treated in our asylums when they are adjudged lunatics, and the latter, who will always be a burden to the State or to friends, have no suitable and separate provision made for them. Under proper treatment many inebriates could be rescued from insanity and made once more, and oftentimes in a short period, self-supporting individuals. It is an urgent necessity that something should be done at once, also, looking to these classes of our citizens.

Now, as a solution of this problem, in all its phases, I offer the following recommendations for the consideration of the Society :

To appoint a Conference Committee consisting of twelve members, viz: the Superintendent of each of our three Asylums, 2 Directors from each Asylum, and 3 Physicians from the State Board of Health, whose duty it shall be to go before the Committee on Asylums at the next approaching General Assembly and urge the passage of a bill which shall have for its object the relief of the insane of the State outside of the Asylum.

If the State cannot be induced to make suitable provision for all of her insane as she should do, the counties, each for its own, must, and I believe will; but we will wait and hope for better things. We cannot believe that this proud State, mother of us all, will allow any of her children to suffer and to sink into degradation and crime and misery, when with her beneficent hand she can elevate and ennoble and enlighten them. When the existing and appalling facts are brought forcibly and persuasively to her attention by the intelligent masses of our people, she will not for long continue to smirch her fair escutcheon with so foul a blot, nor stand forth in the galaxy of nations as the land "that careth not for her own," but rising above the seas of ignorance and prejudice, she will shine forth in the plenitude of her munificence, and send out the glad rays of beneficence and intelligence into every home in our fair land.

In furthering and accomplishing this grand work for humanity it devolves upon us, especially, as physicians and scientific men, to

educate the public mind to the pressing needs of this unfortunate class of which I have spoken, and the State's responsibility to care for such in a manner becoming the advanced civilization of the day. By training, by knowledge and by experience we are aware of the facts and necessities of the case, and with our individual and combined influence we could arouse the legislators of the approaching General Assembly of North Carolina to honest, earnest and conscientious action in behalf of the insane of our State.

It should be no idle dream of an enthusiast which should actuate us, neither should it be a selfish motive nor a maudlin sentiment that inspires us, but, instead, a true love of our State and a righteous regard for her citizens and their vested rights, our battle-cry being: Help for the Curables, Hope for the Incurables.

OBITUARY.

William George Thomas, MD.

"Death, the Reaper, still is reaping" some of the noblest and best of our members. Every passing year affliction lays its heavy hands upon the Society in the loss, by the great Reaper, of some of its truest, ablest, most active and oldest members. The pleasures of our annual gatherings are marred by the absence of cherished associates and devoted medical brethren who met with us in our deliberations and labors, but who are now in the Spirit land looking down with approving smiles, as we fondly trust, upon us and our coadjutors as we progress in our hallowed works for science and humanity. During the last thirty-seven years of the annual meetings (save the years of bloody war) of this Society its founders, its pioneers, its earliest, most constant and strongest supporters, have gradually fallen under the sickle of the great destroyer, until but few, very few, of them remain to cheer us on in our noble labors, and to tell of the early toils and sacrifices, the trials, obstacles and opposition they encountered, as, with unswerving firmness, humane purpose and love of science, born of heroic spirits, they long fought the good fight which enabled them to stem adverse tides in triumph and to pass the State Medical Society through the baptismal fires of success. It is no more true that the blood of the martyrs furnished the seed of the Church than that the large brains, big hearts, high, unselfish purposes and wise, courageous determination of these fathers and pioneers of the Society laid that foundation and established that constitution and framework upon which its superstructure has been built, and they did much themselves to build it.

In this early service and grand work of advancing medical science and of improving, reforming and elevating the medical profession of North Carolina, no one is more prominent, or has done more than our lamented and distinguished friend, Dr. William George Thomas, of Wilmington. He was one of the few bold medical reformers in our State who issued the call for the State Medical Convention that resulted in the formation of the State Medical Society. From that day until his death the Society had not a truer friend or a more devoted and faithful member, nor one who exerted a more potent influence in its behalf.

Wm. C. Rouse

BORN MARCH [illegible] 1812 DIED FEBRUARY 18TH 1900

I stand here to-day to pay tribute to his memory and high character, and to cast a twig of mournful cypress upon his recent and honored grave.

In the March number, for 1890, of the North Carolina Medical Journal there is a grateful and tender editorial notice of Dr. Thomas, written by Dr. Thomas F. Wood, his pupil, his warm admirer and faithful friend. From this excellent production are extracted the following facts: That Dr. William George Thomas was born in Louisburg, N. C., 23d March, 1818, and died in Wilmington, N. C., on the 18th of February, 1890. He was therefore seventy (72) two years old when he died lacking a few days. He was not a college graduate, but secured a common school education at Louisburg, in this State. He afterwards entered upon the study of medicine in the office of Dr. Wiley Perry, of Louisburg. He then entered the University of Pennsylvania at Philadelphia. He took a regular course of studies and graduated under the able instruction of those renowned Professors Drs. George B. Wood, Nathan Chapman, William Gibson, Robert Rogers and Dr. Hodge, who filled so ably at that time chairs in that celebrated old school.

He entered at once upon the practice of his profession in his native State and in the famous old town of Tarboro. He was not long in exhibiting to public admiration and appreciation that love of his profession, that energy, that strong brain and that courtesy and high sense of honor and of duty which characterized his whole life and made him prominent among the leading citizens and most distinguished physicians of the State. It was natural that a gentleman of such high qualifications, personal and professional, for practice, should desire a larger and more inviting field of professional activity. So he was induced to remove to Wilmington in 1850. He was then only 30 years of age. Flushed with a modest consciousness of his powers, vigorous in body and mind, handsome in face, elegant and captivating in manners, well learned, painstaking and laborious, he was not long in securing a high place in the community as a man, a citizen and a physician. Friends and patrons, cordial, true and valuable, flocked to him in large numbers. His practice became large and lucrative, and so continued till the day of his death. No practitioner ever merited it more than he did. No physician was ever more attentive to his patients than he was, nor had a warmer, more sympathetic heart for their pains and suf-

ferings, or for the sorrows and afflictions of others than did this humane and generous man, this true and sympathetic physician.

Not alone was his practice always large in Wilmington, but because of his proverbial skill and success, he had frequent calls from the adjoining counties, and frequently was his presence invoked at a distance of hundreds of miles, and to distant and different points of the State.

Because of the demands made upon him, united to prevalent custom in the profession of our State, he was all his medical life a general practitioner in the usual acceptation of that term. He cultivated an early fondness for the diseases more peculiar to our section and climate, as well as those of females. While not blind to the demands of old landmarks and the claims of old remedies, his love of truth, his fondness for progress and his careful habits of observation and laborious investigations of the claims of different authorities as to the value of new remedies were candidly admitted. He regarded medical science as eclectic in its truest sense.

Dr. Thomas was not only a physician of learning and skill, but a fine and modest surgeon as well; but neither as a physician, surgeon, obstetrician or gynæcologist would he allow his triumphs, or his skill, or his success to be published to the medical world. His innate modesty and dislike to notoriety resisted all entreaties of his friends to allow his meritorious cases to be published or his writings and addresses to appear in print. More prominent and striking would his achievements and skill in medical and surgical practice appear were it not that they were overshadowed, to some extent, by his victories in the more especial field of obstetric science and of gynæcology. He early saw that the use of instruments in difficult cases of obstetrics and the treatment of the special diseases of women had been sadly neglected in North Carolina. He applied himself to needed innovations in this important line, and became a power, as it were, in the use of such instruments in our State and in gynæcology.

In diagnosis it is seldom that any practitioner is more minute, careful or discriminating than he was, or more correct in his opinions or in his conclusions as to the treatment indicated. While tolerant of the opinions of others in consultation, his accuracy in diagnosis was everywhere conceded. Whatever he felt or thought he always freely expressed. He was noted for his fine social quali-

ties and for the warmth and constancy of his friendships. He relished much the pleasures of social intercourse, but never at the neglect of his patients or the professional calls upon his always busy professional life. His cheerfulness and sprightly conversation made him a great favorite in the Wilmington community, and he was the light and life of any social circle in which, for the time, he was thrown. Whether those friends were unfortunate or prosperous, his attachment knew no abatement from change in external circumstances. What is called popular prejudice or current fashion had no influence upon him, whether embracing matters professional, social, educational, political or religious. He formed his opinions with deliberation, and never altered or changed them from insufficient or trivial causes. As his heart was the abiding place of generosity and benevolence, so was his house the home of hospitality, and no one in need ever went away from it empty.

His reading was as regular, systematic and extensive as his busy and laborious life would allow. He had a large and valuable medical library, full of the best standard works and highest authorities, and always abounded in the best medical journals of this country and of Europe. His mind was of a highly practical cast. Adopting whatever seemed to him to be based on sound and correct principles, he brought everything to the test of practical utility. He was kind to the poor and needy. Whether by night or day he did not refuse them his professional attendance. Instances, beyond enumeration, could be given when he not only gave freely his services to the poor, but even furnished from his own liberal purse the necessary family supplies.

I have alluded to his early and persistent and self-sacrificing labors in behalf of this Society. This devotion was based, not alone upon his own love of science and humanity, but because he regarded the Society and its various county auxiliaries as the most efficient ways and means of improving and elevating the profession in North Carolina. There were times in our Society that tried the metal and the souls of Dr. Thomas and his faithful allies in the career of medical improvement and reform in North Carolina. Many timid physicians in the various towns, counties and cities of the State hesitated and refused for years to join the Society because of a timorous fear that it would injure their practice as it did injure the practice of most of those who, in those days of ignorance and

prejudice in North Carolina, had the boldness and fearlessness to enlist under the unsullied flag of medical reform. Nothing has done more, if as much, to widen and deepen the foundations of our body and to bui'd up on high grounds and make it the admiration of its best friends at home and abroad as the maintenance for so many decades of this bright example and hallowed principle of action and duty. Dr. Thomas regarded it as the saving charm and preventive feature of our organization. He positively refused to accept the highest offices and best honors in it until he was literally forced to take the Presidency, after the war, at the annual meeting in his old home of Tarboro. He always magnanimously gave way to others, except when labor was to be performed or sacrifices to be made. In this relation, too, does he leave a bright legacy to the profession and to the community in this untoward day of degrading struggle for office.

The record of his useful and well-spent life is a rich and enduring legacy to his family; to his hosts of sorrowing and devoted friends throughout North Carolina and in other States; to this Society and the medical profession of the State, of which he was so bright and distinguished an ornament, and which had freely bestowed upon him, unsought, the best positions and highest honors in their gift; and to the city of Wilmington, where, as a leading citizen, he was foremost in every good word and work and in all matters pertaining to its best good.

As a patriotic North Carolinian his heart was warm enough and large enough to embrace the whole State. When his system had become worn down by laborious practice in the heated seasons, his friends would sometimes succeed in inducing him to rest for a week or so among the gorgeous mountains and bracing air of our Western counties. Always a great lover of nature, he luxuriated amid these delightful and invigorating scenes, and he returned refreshed, and still fonder of North Carolina, as, with renewed energy, he reapplied himself to the toils and moils of his busy life in Wilmington.

But his pride as a North Carolinian, and his life-long devotion to this war-ridden Southern land, warmer still as the results of the late war impoverished our struggling people, left no place in his patriotic heart for admiration of measures tending to humiliate and punish us for our love and services to "our own, our native land." While as a good citizen and a law and order man, he obeyed the laws and

the Constitution of the reconstructed South, no coercive measures, no new-fangled ideas of cranky statesmen, or delusive morality of quack philanthropists following in the wake of the results of that mighty struggle, and diligently sought for the last twenty-five years to be transplanted to Southern soil, never indigenous to such unnatural products, ever weakened his allegiance to the old South, nor to cease to hold that in morals, and education, and religion, the old things are best. While no heart in this broad Southern land yearned more for Southern recuperation, prosperity and progress, or was more ready to aid all he could in advancing Southern enterprise and improvements, he had no faith in temporary artificial stimulants to these ends, nor in that sentimental cant, or sensational methods for changing the old South into a new South, of which we have all heard so much since the war. It gladdened his heart to welcome substantial indications of returning prosperity to our fields, our workshops, our towns and cities, and to all our industrial and professional pursuits, but he could not be converted to the theory, fashionable it may be, but delusive, that the artificial stimulants of "booms," so-called, or the wild speculations of deluded and selfish speculators, could build up our counties, towns or cities. While ever ready to do his duty to the present, he was for standing by all that was good in the old South, all that was upright and patriotic in thought, truthful in name, brave and heroic in character and service.

But it was the radiant beauty of his Christian life that gave a crowning excellence to his well-balanced and exemplary character. It was a remark of the great Napoleon Bonaparte that the early impressions and teachings of the mother to the son give shape and destiny to the character of the man. A greater has said: "Train up a child in the way he should go, and when he is old he will not depart from it." Dr. Thomas had a noble Christian mother, and she early and profoundly impressed her children with the truths of Christianity and the beauty of a Christian life. Often, in most tender, loving and grateful terms have I heard him speak of his devoted mother, not alone that she had instilled into his youthful heart an undying love of truth, integrity and correct principles of every day life, but that she had taught him to love the Bible and the blessed Redeemer and Saviour of men.

He held his church relations to the day of his death, illustrating

by an upright life, heavenly-minded thoughts and conversation and a Godly walk, a comforting and soul-sustaining belief in the doctrines of the Christian religion.

More distinguished for solid than brilliant parts, his knowledge was of a substantial kind. He had no dazzling qualities. Always a ripe scholar in the principles of his profession, he made good use of his great experience. He had a benevolent heart. The community in which he lived will not forget the influence of his generous acts and noble charities. In public improvements, in efforts for moral elevation and intellectual advancement, or for enhancing the interests and comforts of the community, his heart and hand and purse were readily enlisted. Had he been an avaricious or miserly man, his large and lucrative practice would have made him wealthy. But his love of charity and numberless acts of benevolence to the sick and suffering, to the poor and needy, to the cause of education and religion, and to the Church, his hearty response to almost every call made upon his ever-open purse, did not enable him to leave his family an ingathering harvest of wealth. The sweet perfume and fragrant odor of a pure record and an honest fame, more valuable than fleeting riches, make up a noble inheritance he has transmitted to his family, his profession and his State. As he cast his bread upon the waters, let it be gathered up and preserved under the blessing of the widow's God and the children of the fatherless; let it be known that he increased his pleasures by taking a lively interest in the prosperity of his friends and neighbors; let us cherish the consoling truth that, in his death, there has gone from among us one whose influence, though gentle as the evening zephyr, was wide and salutary—a physician in whose skill there was safety, in whose integrity there was entire confidence, in whose character there was unwavering rectitude, and from whose frank and handsome face there beamed benevolence and philanthropy.

Nor did his useful and exemplary life find him unprepared for a Christian's death. He kept his reason until near the last. When in this clear frame of mind he talked freely of religion and of his hopes of Heaven. He said to one of his attending physicians that though he preferred to live, he felt prepared for death. With this significant utterance and cheering evidence he calmly departed from earthly scenes, less congenial to his pure spirit, to the blessed fruition of an heavenly inheritance prepared by his Redeemer above.

"Exhausted by the storm,
A fatal trance hung o'er his pallid form,
His closing eye a living lustre fired,
'Twas life's last spark, it fluttered and expired."

He died a hero—and as all heroes prefer to die—with his armor on, pressing onward, with his gleaming sword, and with his face to the foe, and with that indifference to exposure, to contagion, and that fearlessness of danger, which was characteristic of him in his professional ministrations. He was in attendance upon a malignant case of diphtheria in a child struggling for life after an operation for intubation. He was close, untiring, constant in his attentions to the little sufferer, sometimes remaining for hours watching the case, and much of the time in immediate personal contact. Day after day and night after night did he give this sort of heroic attention until death removed the patient from distressing suffering. *Dr. Thomas imbibed the diphtheritic poison in his own system*, and in a few days was prostrated therefrom with a violent attack of diphtheria. The symptoms were grave and alarming from the first, and the issue doubtful, even under the acknowledged skill and the most faithful and untiring attention of the best physicians of that city. The case progressed from bad to worse, and still worse, from day to day, until death closed the harrowing and mournful scene. Thus, with his own heroic spirit and brave devotion to his profession, and with his own self-sacrificing hands,

"He winged the shaft that quivered in his breast."

He literally went down to the grave with his little patient, thereby becoming a martyr to his profession, to science, to duty and to humanity. If there ever has occurred in our State a more touching or more thrilling case of professional heroism, the records of scenes or of noble men have failed to show it.

No fond or heart-stricken family were ever plunged into deeper sadness or grief at the loss of its head than his. No community were ever overwhelmed more with sadness and sorrow at the death of a leading citizen than was the city of Wilmington on this mournful occasion. The city was covered with gloom. Expressions of sympathy and sorrow were strong and universal, especially from those who had long relied, in confidence and faith, upon his skill in sickness and suffering.

LIST OF MEMBERS

In the Order in which they Signed the Constitution.

(NOTE.—Any person noting any errors or omissions in this roster will confer a favor if they will write a full correction of such mistake to the Secretary of the Society at Oxford, N. C., or the Editors of the NORTH CAROLINA MEDICAL JOURNAL, at Wilmington, North Carolina.

NAME.	P. O. ADDRESS.	Signed Constitution.
J. B. Dunn	Raleigh	1849
E. B. Haywood	Raleigh	1853
N J Pittman	Tarboro	1850
S S Satchwell	Rocy Point	1850
Robt Gibbon	Charlotte	1851
A B Pierce	Weldon	1852
Allman Holmes	Clinton	1852
E A Anderson	Wilmington	1852
J J Summerell	Salisbury	1855
Peter E Hines	Raleigh	1855
J G Ramsay	Rowan Mills	1855
R H Winborne	Edenton	1857
Geo A Foote	Warrenton	1858
Eugene Grissom	Raleigh	1859
R L Payne	Lexington	1859
W J Jones	Goldsboro	1860
Chas J O'Hagan	Greenville	1860
J W Jones	Tarboro	1860
J K Ruffin	Wilson	1860
Wm R Wood	Scotland Neck	1867
P A Barrier	Mt Pleasant	1867
Thos F Wood	Wilmington	1867
Geo L Kirby	Goldsboro	1867
J F Shaffner	Salem	1867
W T Cheatham	Henderson	1868
Elisha Porter	Rocky Point	1868
F J Haywood	Raleigh	1868
B P Alston	Henderson	1863
G G Smith	Concord	1869
D N Patterson	Mangum	1869
L L Staton	Tarboro	1869
H T Bahnson	Salem	1869
W W Lane	Wilmington	1870
Chas Duffy, Jr	Newbern	1870
Wm J Love	Wilmington	1870
Jas McKee	Raleigh	1870
Willis Alston	Littleton	1870
W J H Bellamy	Wilmington	1870
J L Knight	Tarboro	1870
W I Royster	Raleigh	1871
Geo Gillet Thomas	Wilmington	1871
John McDonald	Washington	1872
Francis Duffy	Newbern	1872
A G Carr	Durham	1873
J F Miller	Goldsboro	1875
J M Hadley	LaGrange	1873
J W Vick	Selma	1873
P L Murphy	Morganton	1873
Jos Graham	Charlotte	1874
W H Lilly	Concord	1874
J H McMullen	Heriford	1874
T D Haigh	Fayetteville	1874
L J Picot	Littleton	1875
D N Sills	Castalia	1875
W H Whitehead	Battleboro	1875
R H Speight	Tarboro	1875
H G Land	Poplar Branch	1875
W C McDuffie	Fayetteville	1876
Henry Tull	Kinston	1876
A V Budd	Lockville	1876
J W McNeill	Fayetteville	1876
J D McMillan	Lumberton	1876
[illegible]	[illegible]	1876

NAME.	P. O ADDRESS.	Signed Constitution.
J D Roberts	Goldsboro	1877
Geo W Long	Graham	1877
Geo W Graham	Charlotte	1877
N S Siewers	Salem	1877
Richard H Lewis	Raleigh	1877
F W Potter	Wilmington	1877
J F Harrell	Whiteville	1877
A M Lee	Clinton	1877
J R McClelland	Mooresville	1878
R J Noble	Selma	1878
W H H Cobb	Goldsboro	1878
J H Tucker	Henderson	1878
E H Hornaday	Willow Green	1878
J F Harrell	Whiteville	1877
A M Lee	Clinton	1877
J R McClelland	Mooresville	1878
R J Noble	Selma	1878
W H H Cobb	Goldsboro	1878
J H Tucker	Henderson	1878
E H Hornaday	Willow Green	1878
P B Barringer	University of Virginia	1878
I W Faison	Mt Olive	1878
Hubert Haywood	Raleigh	1879
J M Covington	Rockingham	1879
C E Bradsher	Durham	1879
S W Stevenson	Mooresville	1879
H T Trantham	Salisbury	1879
W P Beall	Greensboro	1879
A D McDonald	Wilmington	1879
S B Jones	Charlotte	1879
J J Cox	New Garden	1879
D M Prince	Laurinburg	1879
J A Sexton	Raleigh	1879
S B Evans	Statesville	1879
E T Speed	Mt Tirzah	1879
John C Walton	Prosperity Hill	1879
R A Hargrave	Robersonville	1879
W L Abernathy	Hickory	1879
Julian M Baker	Tarboro	1879
T E Balsley	Reidsville	1879
Thos E Anderson	Statesville	1879
J M Stansill	Rockingham	1879
W K Anders	Gravel Hill	1880
Thomas Hill	Goldsboro	1880
Ed de la Rose King	Beaufort	1879
Richard Dillard	Edenton	1879
J C Shepard	Scott's Hill	1880
W C Galloway	Snow Hill	1880
T W Harris	Chapel Hill	1880
T S Burbank	Wilmington	1880
R W Thomas, Sr	Thomasville	1879
R H Adams	Gastonia	1880
C M Poole	Salisbury	1880
J L Nicholson	Richlands	1880
A W Knox	Raleigh	1880
John Whitehead	Salisbury	1880
S J Montague	Winston	1880
Jno A Collins	Enfield	1880
W P Mercer	Toisnot	1880
B F Whiteside	Hickory	1881
W L Crump	South River	1881
S P Waldo	Cary	1881
D J Cain	Asheville	1881
J A Reagan	Weaverville	1881
T B Robertson	Neuse	1881
H W Lilly	Fayetteville	1881
G W Fletcher	Fletcher P. O.	1881
S H Lyle	Franklin	1881
J Anderson	Calahan	1881
E Croxell	Lincolnton	1881

NAME.	P. O. ADDRESS.	Signed Constitution.
Thos M Jordan	Hookerton	1881
W L Hilliard	Asheville	1881
C Winston	Franklinton	1881
R L Payne, Jr	Lexington	1881
T F Meisenheimer	Morven	1881
T F Pharr	Concord	1881
W D Hilliard	Asheville	1881
J W Moose	Agnes, Tex	1881
J H Faison	Faison	1881
W L Reagan	Ivy	1881
H B Weaver	Weaverville	1881
A J Battle	Earpsboro	1881
J H Williams	Asheville	1881
J R Irwin	Croft	1882
A R Wilson	Pelham	1882
K P Battle, Jr	Raleigh	1882
H B Furgerson	Halifax	1882
J T Strickland	Thomasville	1882
J B Gunter	Bingham School	1882
Geo S Lloyd	TarPoro	1882
R S Young	Concord	1882
R A Smith	Goldsboro	1882
M C Hunter	Huntersville	1882
C A Meisenheimer	Charlotte	1882
W P Whittington	Ashevilld	1882
W W Faison	Goldsboro	1883
W O McDowell	Scotland Neck	2883
N H Street	Pollocksville	1883
J A Stevens	Clinton	1883
T S Royster	Williamsboro	1883
I M Taylor	Morganton	1883
J M Hodges	Mt Olive	1883
S H Rogers	Raleigh	1883
W L Hudson	Hawley's Store	1883
Oscar Gregory	Oxford	1883
F R Harris	Henderson	1883
H H Whitaker	Old Sparta	1883
G C Edwards	Hookerton	1883
E M Summerell	Salisbury	1883
K M Ferguson	Cameron	1883
P J Macon	Warrenton	1883
D B McNeill	Shallotte	1883
H T Bass	Tarboro	1883
N M McLean	Gibson's Station	1883
J H Anderson	Tarboro	1883
F C James	Bethel	1883
J C Braswell	Whitakers	1883
G L Wimberley, Jr	Rocky Mount	1883
H I Clark	Hamilton	1883
W G Freeman	Murfreesboro	1884
W C Whitfield	Sladesville	1884
J A Burroughs	Asheville	1884
F M Brown	Greenville	1884
J W Long	Randleman	1884
M P Perry	Macon	1884
G J Robinson	Smithfield	1884
M R Adams	Statesville	1884
G T Sikes	Grissom	1884
W B Pritchard	355 W 58 St, N Y	1884
J M Manning	Durham	1884
F T Fuller	Raleigh	1884
H P Murray	Plymouth	1884
V A Whitney	Norwood	1884
J B Beckwith	Smithfield	1884
G W Purefoy	Asheville	1884
M H Futrell	Woodland	1884
B F McMillan	Plainview	1884
J E Grimsley	Snow Hill	1884
R F Gray	Winston	1884
W J Jones, Sr	Goldsboro	1884
J P Smallwood	Lewiston	1885
W N Hicks	Fish Dam	1885
L P Sorrell	Kelvin Grove	1885
J C Whiteside	Morganton	1885
W H Wilson	Dallas	1885
L M Archey	Concord	1885
C E Adams	Gastonia	1885
J H Baird	Briggsville	1885
W E Powell	Castoria	1885
G C Cope	Heilig's Mill	1885
J B Powers	Wake Fo..est	1885
F W Hughes	New Berne	1885
L L Sasser	Smithfield	1885
E W Pugh	Windsor	1885

NAME.	P. O. ADDRESS.	Signed Constitution.
J H Powell	Goldsboro	1885
J H Benton	Newton Grove	1885
Henry Sloan	Lisbon	1885
W P Kennedy	Warsaw	1885
A P Dixon	Vollers	1885
Patrick Booth	Knap of Reeds	1885
R J Porter	Youngsville	1885
R T Spencer	Chalk Level	1885
J A Hodges	Fayetteville	1885
D N Dalton	Winston	1885
Annie L Alexander	Cowan's Ford	1885
John O'Brien	Halifax	1885
J T Nicholson	Bath	1885
J M Hays	Oxford	1885
A T Cotten	Morrisville	1885
A B Roberson	Chapel Hill	1885
A D York	Morrisville	1885
J P McKay	Averasboao	1885
J T Shubrick	Winton	1885
S L Montgomery	Monroe	1885
J S Bell	Matthews	1885
K Leggett	Palmyra	1885
W W Pharr	Query's	1885
J C Perry	Newbegun	1885
J M Faison	Faison	1885
J W McGee	Raleigh	1885
A W Dorsett	Bethany	1885
D G Caldwell	Tulin	1885
J M Emmett	Oxford	1885
W B Crisp	Cliffa	1885
Gilbert McLeod	Carthage	1885
J M O'Kelly	Williams Mills	1885
W T Pate	Laurel Hill	1885
R A Whitaker	Trenton	1885
J I Coleman	Hurd.e's Mills	1885
J A Wise	Fairview	1885
M F Fox	Greensboro	1885
D T Tayloe	Washington	1885
Zeno Brown	Greenville	1885
F W Ritter	Shiloh	1885
S R Hardee	Moriah	1885
Mayland Bolton	Rich Square	1885
A A Maynard	Cairo	1885
W E Turlington	Benson	1885
A P Keever	Keeversville	1885
S T Nicholson	Washington	1885
Fleet J Cooper	Hives	1885
T C Bullock	Blockers	1886
C J Mattock	Pollocksville	1886
H C Jackson	Pittsboro	1886
G H Dodd	Clayton	1886
A W Hamer	Laurinburg	1886
D B Zollicoffer	Garysburg	1886
E M Littlejohn	Thomasville	1886
E H Bobbitt	Palm Spring, Va	1886
U S Hassell	Jamesville	1886
J M BoyEtte	Little River Academy	1886
E Rose Dorsett	Salisbury	1886
R W Thomas	Durham	1886
Edward Clark	Middleton	1886
B S Utley	Holly Springs	1886
R A Whitaker	Trenton	1886
Chas Duffy	Catherine Lake	1886
M W Harper	Dunn	1886
H T Chapin	Pittsboro	1886
H H Harriss	Wake Forest	1886
S C McClure	Statesville	1886
W H Ward	Plymouth	1886
M E Robinson	Goldsboro	1886
O D King	Wilmington	1887
H L Abernathy	Hickory	1887
W D Pemberton	Big Lick	1887
A J Hoover	Lincolnton	1887
J H McDuffie	Keyser	1887
S S Daniel	Winton	1887
A W Goodwin	Raleigh	1887
W H Bagwell	Pactolus	1887
J M Gallagher	Washington	1887
H W Lewis	Jackson	1887
Henry H Dodson	Milton	1887
S W Battle, U S A	Asheville	1887
J F Beall	Linwood	1887
W L Crouse	Crouse	1887
Joe Hill	Arcadia	1887

Name.	P. O. Address.	Signed Constitution.
R H Stancill	Margarettsville	1887
R A Patterson	Aurelian Springs	1887
J McDeArmon	Mint Hill	1887
J G Christian	Mt Gilead	1887
J H Bingham	Garrison	1887
R J Brevard	Charlotte	1887
W B Henderson	Hopewell	1887
D O'Donoghue	Charlotte	1887
D McBryde	Maxton	1887
E C Register	Enselville	1887
R W Tate	Greensboro	1887
Jas M Dunlap	Ansonville	1887
J D Croom	Maxton	1887
W C Ramsay	Monroe	1887
J A Avery	Pineville	1887
D C Parris	Hillsboro	1887
J M Lawing	Lincolnton	1887
R W Winborne	Barnitz	1887
W P Craven	Martindale	1887
W S Anderson	Wilson	1888
G E Ashcraft	Monroe	1888
J M Belk	Morven	1888
J G Bradnax	Greensboro	1888
J E Brothers	Stantonsburg	1888
L G Broughton	Reidsville	1888
A Cheatham	Henderson	1888
B T Cox	Greenville	1888
D S Ellis	Woodland	1888
J A Faison	Mt Olive	1888
T C Ferree	Brown Summit	1888
E B Goelet	Saluda	1888
J C Grady	Seven Springs	1888
J A Griffin	Godwin	1888
W B Harrell	Dunn	1888
A S Harrison	Ringwood	1888
S A Henley	Ashboro	1888
N B Herring	Wilson	1888
W Josephus Jones	Clayton	1888
C H Lewis	Farmers	1888
H W Lucas	Black Creek	1888
W J Lumsden	Elizabeth City	1888
Jenness Morrill	Farmville	1888
H B Marriatt	Battleboro	1888
F T Meriwether	Asheville	1857
E H McCuller	Clayton	1888
A McDougald	Cumberland Mills	1888
Geo H Moran	Morganton	1888
Jas W McGee, Jr.	Raleigh	1888
D C Moore	White's Store	1888
A McKinnon	Lumber Bridge	1888
W A Monroe	Waxhaw	1888
J R Pearsall	Manchester	1888
J B Robertson	Clayton	1888
C W Sawyer	Elizabeth City	1888
Duncan Smith	Athens	1888
Duncan Sinclair	Plain View	1888
Jas Spicer	Goldsboro	1888
M M Tatum	Winnie	1888
C B Woodley	Trenton	1888
A R Zollicoffer	Weldon	1888
Thos Stamps	Milton	1888
Jno H Jenkins	Dallas	1888
H Stokes Lott	Winston	1888
T P Wynn	Tarboro	1888
I Jackson	Whiteville	1889
A Anderson	Wilson	1889
J T J Battle	Wadesboro	1889
T S Burbage	Riddicksville	1889
R N Cartwright	Elizabeth City	1889
B F Dixon	Oxford	1889
E C Perebee	Bellcross	1889
W B Fearing	Poplar Branch	1889
W W Griggs	Elizabeth City	1889
W H Hardison	Creswell	1889
Oscar McMullan	Elizabetn City	1889
W C Melton	Conetoe	1889
J E Wood	Elizabeth City	1889

NEW MEMBERS, 1890.

Dr. I. G. Riddick, Youngsville, N. C.
" M. A. Braswell, Rocky Mount, N. C.
" J. W. Booth, Tally Ho.
" T. J. Booth, Tally Ho.
" W. H Cobb, Jr., Goldsboro, N. C.
" B. Chears, Thomasville, N. C.
" W. B. Crawford, Lexington, N. C.
" J. Z. Edgerton, Hendersonville, N. C.
" J. P. Farrington, Faison, N. C.
" A. Z. Gibbon, Charlotte, N. C.
" W. A. Graham, Charlotte, N. C.
" B. W. Hathaway, Avoca, N. C.
" Z. A. Hanks, Pittsboro, N. C.
" W. A. Harrell, Williamston, N. C.
" S. H. Kenedy, Wilton, N. C.
" R. B. Henderson, Wilton, N. C.
" C. E. Hilliard, Asheville, N. C.
" J. C. Kirkman, Mt. Vernon Springs.
Dr. J. S. Lafferty, Concord, N. C.
" P. B. Loftin, Grifton, N. C.
" C. E. Laird, Haw River, N. C.
" I. M. Lynn, Flint, N. C.
" J. J. Mann, Nashville, N. C.
" R. A. Martin, Roxboro, N. C.
" E. R. Michaux, Greensboro, N. C.
" E. G. Moore, Toisnot, N. C.
" J. H. Marsh, Fayetteville, N. C.
" J. P. Monroe, Davidson College, N. C.
" J. N. Peace, Creedmoor, N. C.
" J. R. Rogers, Apex, N. C.
" J. L. Ray, Burnsvill, N. C.
" E. P. Snipes, Jonesboro, N. C.
" W. G. Stafford, Burlington, N. C.
" Jno. Sweaney, Bersa, N. C.
" J. W. White, Wilksboro, N. C.

HONORARY MEMBERS,

Dr. J. D. Bellamy, Wilmington, N. C.
" Thos. J. Moore, Richmond, Va.
" Dr. Jno. H. Hill, Goldsboro.
Dr. W. T. Howard, Baltimore, Md.
" Hunter McGuire, Richmond, Va.
Prof. L. A. Sayre, M. D., New York.

Members 414; Honorary Members 6.

DATE DUE

N 84

PRIVATE LIBRARY
No.
Br. J. Howell Way
WAYNESVILLE, N. C.